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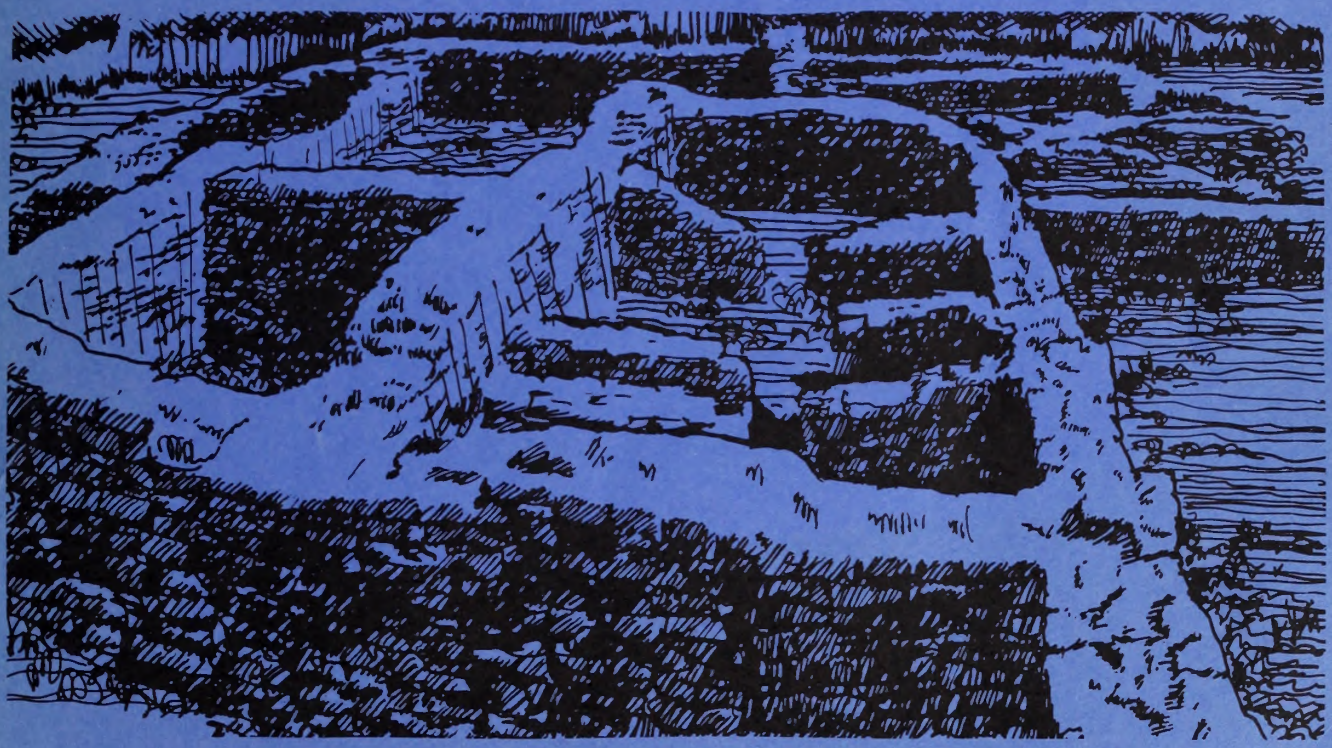

and Environmental Impact Statement

Bureau of Land Management

Montrose District, Colorado

DRAFT APRIL 1984

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DRAFT RESOURCE MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT FOR THE SAN JUAN-SAN MIGUEL PLANNING AREA

prepared by

BUREAU OF LAND MANAGEMENT
U.S. DEPARTMENT OF THE INTERIOR

Paul W. Arrasmith
District Manager
Montrose District

I concur: Bob Moore
Acting Colorado State Director

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RESOURCE MANAGEMENT PLAN/ ENVIRONMENTAL IMPACT STATEMENT

for the

SAN JUAN-SAN MIGUEL PLANNING AREA

DRAFT (X) FINAL ( )

The United States Department of the Interior, Bureau of Land Management

1. Type of Action: Administrative (X)
   Legislative ( )

2. Abstract: This Draft Resource Management Plan and Environmental Impact Statement describes and analyzes four alternatives for managing the public lands and resources in the San Juan-San Miguel planning area, which are: (1) Resource Conservation, (2) Resource Utilization, (3) Current Management (No Action), and (4) Preferred Alternative.

3. Comments have been requested from the following: See Chapter 4, Consultation and Coordination, for a list of individuals and groups on our mailing list.

4. For further information, contact:

   Dave J. Miller, Area Manager
   Bureau of Land Management
   San Juan Resource Area
   Room 102, Federal Building
   701 Camino del Rio
   Durango, Colorado 81301
   Telephone: (303) 247-4082

5. Comments on the Draft statement must be received no later than: JULY 28,1984

SAN JUAN/SAN MIGUEL

RESOURCE MANAGEMENT PLAN/ENVIRONMENTAL IMPACT STATEMENT

DRAFT

APRIL 1984

U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

SAN JUAN RESOURCE AREA

DURANGO, COLORADO 81301

UNCOMPAHGRE RESOURCE AREA

MONTROSE, COLORADO 81401

San Juan/San Miguel
RMP/EIS

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SAN JUAN/SAN MIGUEL RMP/EIS SUMMARY

Introduction

Four alternatives are considered in detail in this Resource Management Plan/ Environmental Impact Statement (RMP/EIS), three of which--Current Management (no action), Resource Conservation, and Resource Utilization--were developed to explore a reasonable range of alternatives. The fourth alternative--the Preferred Alternative incorporates portions of the Current Management, Resource Conservation, and Resource Utilization alternatives and generally represents a balanced approach to resource management. They were developed as multiple use alternatives and are realistic, implementable and comply with Council on Environmental Quality (CEQ) and Bureau of Land Management (BLM) planning regulations.

Preferred Alternative

Introduction

The Preferred Alternative balances competing demands by providing goods and services while protecting important and sensitive environmental values. The goal of this alternative is to change present management to the extent necessary to meet statutory requirements and policy commitments and to resolve identified issues in a balanced, cost-effective manner. The following discussion describes the overall management that would result from implementing this alternative.

Seventy-one Allotment Management Plans (AMPs) would be developed on approximately 810,000 acres. The estimated cost for range improvements required to implement this alternative is approximately $1 million. Authorized livestock use in the planning area could increase in the long term. The projected result of all adjustments would be an initial reduction of 22,461 AUMs (33%) from current active preference (see Glossary). In the long term, livestock use would be projected to increase to 73,601 AUMs or 13 percent above current active preference. This alternative could result in beneficial, long-term impacts to livestock operators because of increases in livestock production. Designating the Sacred Mountain area as an Area of Critical Environmental Concern (ACEC), now called the Anasazi Cultural Multiple Use Area, could have long-term, positive impacts to livestock management due to increased monitoring and supervision.

This alternative could result in long-term improvements in ecological vegetation condition covering the entire planning area. That portion of the area in excellent condition would remain unchanged, while the percentage in good condition would increase from 3 percent to 8 percent, and the percentage in fair condition would increase from 23 percent to 26 percent. Poor condition sites would decrease from 39 percent to 31 percent.

Wildlife habitat would be managed to support the current population levels of 20,000 deer and 1,600 elk. Pronghorn antelope would increase to 300 animals and the reintroduction of 300 bighorn sheep in the Dolores River Canyon Wilderness Study Area (WSA) would be allowed. Protective stipulations for threatened and endangered (T&E) species would be provided. An estimated $528,000 would be necessary to complete the improvements and Habitat Management Plans (HMPs) projected under this alternative. Terrestrial wildlife habitat conditions should improve significantly, covering the majority of the planning area. T&E species would benefit from the provided protection. Long-term positive impacts

to wildlife could occur from designating the Sacred Mountain area an ACEC due to more intensive management.

Aquatic and riparian habitat would be improved on the following rivers and their tributaries (in priority order): the upper San Miguel, the upper Dolores, and the lower San Miguel. An estimated $233,000 is projected to develop HMPs and to implement necessary improvements. Long-term positive impacts on 94 miles of aquatic and riparian habitat could be realized under this alternative. Intensive livestock and wildlife management would improve an additional 306 miles of habitat.

Managing the Silverton Special Recreation Management Area (SRMA) would continue. The Dolores River would be managed as an SRMA and an allocation system for visitor use would be implemented. Recreation management plans for both SRMAs would be developed. The McElmo Research Natural Area would be maintained and the mineral withdrawal would be removed.

Protecting and enhancing recreation resources by management and imposing development restrictions could have long-term positive impacts to recreation and overall would continue to provide the settings and opportunities most desired by the public. Wilderness designation could have both positive and negative long-term impacts to recreation opportunities and settings.

The Dolores River Canyon WSA (approx. 28,366 acres) would be recommended for wilderness designation; as a result, over the long term, wilderness values would generally be maintained. The other seven WSAs would be returned to multiple use management under various other emphases resulting in a loss of wilderness values for those areas.

Sixty-eight percent of the total acreage available for oil and gas consideration would be open for leasing and development under standard stipulations. Twenty-five percent of the total acreage would be available under seasonal restrictions to protect wildlife species, and approximately three percent would be subject to no-surface occupancy stipulations to protect wildlife, cultural resources, and recreation values. Less than 5 percent of the total acreage would not be available for leasing because of T&E wildlife species, cultural resources, and recreation values. Approximately 34,000 acres (3%) of the area would be closed to mineral entry. An estimated 46,000 acres (1.5 billion tons) of the Durango Known Recoverable Coal Resource Area (KRCRA) and 1,480 acres (26.6 million tons) of the Nucla KRCRA would be available for coal leasing and 100 percent of the East Cortez KRCRA would not be available for leasing or development. This alternative would result in significant, long-term adverse impacts to mineral development because of withdrawals from mineral entry and from no leasing and no-surface occupancy stipulations.

This alternative would provide continued protection and management to important cultural sites and areas. Overall long-term benefits could occur because of the protective withdrawals and stipulations to mineral development. Designating the Sacred Mountain area as an ACEC could have long-term positive impacts to cultural resources. The Tabeguache Creek area would be managed as a Outstanding Natural Area. Withdrawals of minerals would be requested on approximately 560 acres along the Tabeguache Creek drainage to protect the special cultural values.

Land disposal (through sales, exchange, or title transfer) could be allowed on approximately 21,800 acres or 2.2 percent of the public lands in the planning area, a long-term impact which would improve the efficiency of management on all BLM-retained lands.

A wild horse herd consisting of 50 head would be intensively managed in the Spring Creek Basin herd area. All horses would be removed from the Naturita Ridge herd area. There would be positive impacts to wild horse viewing in Spring Creek Basin and negative impacts to horse viewing in the Naturita Ridge area. Positive, long-term impacts to vegetation, livestock grazing, and wildlife resources could occur on Naturita Ridge as a result of removing the horses.

Intensive timber management on approximately 10,960 acres would be provided. The estimated allowable harvest would be 6.5 million board feet (MMBF) per decade. An additional 42,130 acres would be managed to provide woodland products, creating an estimated allowable harvest of 6.4 MMBF (12,800 cords) per decade. Insignificant production losses due to proposed and existing management could occur. Over the long term, improved management could result in increased wood fiber production.

Approximately 65,000 acres of intensive watershed management would be implemented to reduce erosion and sediment yields. To reduce salinity in the Colorado River, 46,000 acres would be intensively managed. Long-term significant decreases in erosion, sediment, and salinity yields could occur. Municipal and domestic water sources would be protected.

Improving fire management in a natural ecological setting would occur. Natural successional changes in vegetation communities would be enhanced.

Public lands would be designated 79 percent open, 11 percent limited, or 10 percent closed to ORVs.

Increased revenues are projected from mineral resources and recreation; however, no significant socioeconomic impacts in the planning area would occur as a result of this alternative.

Resource Conservation Alternative

Introduction

This ecologically preferred alternative provides management direction to enhance nonconsumptive natural resource values. Multiple resource uses will continue in most areas; however, some areas may allow limited use or may be closed to specific resource uses, such as mineral development or access through sensitive wildlife areas. Projects which enhance resource values such as improving wildlife and riparian areas would receive priority. The following discussion describes the overall management that would result from implementing this alternative.

Fifty-three AMPs would be developed on approximately 694,000 acres, with the estimated cost for range improvements required to implement this alternative $430,000. Authorized livestock use in the planning area would be significantly reduced. The projected result of all adjustments would be an initial reduction of 29,062 AUMs (45%) from current active preference. In the long term, livestock use would be projected to decrease to 43,160 AUMs, or 33 percent below current active preference. Implementing this alternative could result in a significant monetary loss to livestock operators due to lowered livestock production in both the short and long term.

Impacts of this alternative could be long-term improvements in ecological vegetation conditions covering the entire planning area. That portion of the area in excellent condition would remain unchanged; however, the percentage of the area in good condition would increase from 3 percent to 5 percent, while the percentage in fair condition would increase from 23 percent to 24 percent. Poor condition sites would decrease from 39 percent to 36 percent.

Wildlife habitat would be managed to support current population levels of 20,000 deer and 1,600 elk. Pronghorn antelope would increase to 300 animals and the reintroduction of 300 bighorn sheep in the Dolores River Canyon would be allowed. Protective stipulations would be provided for T&E species. An estimated $358,000 would be necessary to complete the improvements and projected HMPs. Terrestrial wildlife habitat conditions would improve over the majority of the planning area and T&E species would benefit from the provided protection.

The aquatic and riparian habitat would be improved on the following rivers and their tributaries (in priority order): the upper San Miguel, the upper Dolores, and the lower San Miguel. An estimated $473,000 is projected to develop HMPs and implement necessary improvements. Long-term, positive impacts on 249 miles of aquatic and riparian habitat could be realized under this alternative.

Managing the Silverton SRMA would be continued. The Dolores River Canyon would be managed as an SRMA and a limited allocation system for visitor use would be implemented. Recreation management plans for both SRMAs would be developed.

Protecting and enhancing recreation resources by management and development restrictions could have long-term, positive impacts to recreation and overall would continue to provide the settings and opportunities most desired by the public. Wilderness designation could have both positive and negative, long-term impacts to recreation opportunities and settings.

All eight WSAs would be recommended for wilderness designation. As a result, wilderness values would be generally maintained over the long term on 102,601 acres in the planning area.

Under this alternative, 65 percent of the total considered acreage would be available for oil and gas leasing and development under standard stipulations. Twenty-five percent of the total acreage would be available under seasonal restrictions to protect wildlife species, and approximately two percent would be subject to no-surface occupancy stipulations to protect wildlife, cultural, and recreation values. Approximately 8 percent of the total acreage would not be available for leasing primarily due to wilderness designation. Approximately 13 percent of the public land would be closed to mineral entry under this alternative. An estimated 34,000 acres (943 million tons) in the Durango KRCRA would be available for coal leasing. All of East Cortez and Nucla KRCRAs would not be available for leasing or development. Significant long-term, adverse impacts to mineral development due to the withdrawals from mineral entry and from no leasing and no-surface occupancy stipulations could result.

This alternative would provide continued protection and management emphasis to important cultural sites and areas. Overall long-term benefits could occur due to protective withdrawals and stipulations on mineral development. Due to designating all eight WSAs, there could be potential adverse impacts to cultural resources due to increased visitor use.

Under this alternative, land disposal (through sales, exchanges, or title transfer) would be allowed on approximately 18,000 acres or 1.8 percent of the public lands in the planning area, a long-term impact which would improve the efficiency of management on all BLM-retained lands (see Resource Conservation Alternative map at back of this RMP).

Seventy-five wild horses in the Spring Creek Basin herd area and 50 wild horses in the Naturita Ridge herd area would be intensively managed. Wild horses could be managed at healthy, viable levels in both areas. Beneficial impacts to wild horse viewing and supplemental values of wild horses in the McKenna Peak WSA would occur.

Intensive timber management on approximately 7,930 acres would be provided. The estimated allowable harvest would be 4.7 MMBF per decade and an additional 35,170 acres would be managed to provide woodland products, creating the estimated allowable harvest of 5.3 MMBF (10,600 cords) per decade. Over the long term, improved management could lead to increased wood fiber production.

Intensive watershed management consisting of 78,000 acres would be implemented to reduce erosion and sediment yields. Approximately 30,000 acres would be managed to reduce salinity in the Colorado River. Long-term, significant decreases in erosion, sediment, and salinity yields could occur. Municipal and domestic water sources would be protected. There could be potential losses of opportunities for erosion, sediment, and salinity control work in designated wilderness areas.

Improved fire management in a natural ecological setting would occur and natural successional changes in vegetation communities would be enhanced.

Wilderness designation would adversely affect access on approximately 102,601 acres. Public lands would be designated 80 percent open, 6 percent limited, or 14 percent closed to ORV use.

No significant socioeconomic impacts in the planning area would occur due to only minor changes in the existing situation.

No Grazing Subalternative. The No Grazing Subalternative was developed to respond to BLM requirements which concern analyzing livestock grazing on public land. All other programs in the Resource Conservation Alternative would be managed as described under that alternative, except domestic livestock would not be licensed on public land.

Livestock use consisting of 64,232 AUMs could be lost in both the short and the long term, which could result in significant, adverse impacts to livestock operators because of lowered livestock production. Both short- and long-term beneficial impacts to vegetation could occur.

A long-term potential decline in habitat condition could occur, but overall impacts would be positive to wildlife habitat. Long-term beneficial impacts to aquatic and riparian habitat, wilderness characteristics and values, and projected, lowered erosion rates could occur.

In the long term, wild horses could increase in the Spring Creek Basin and the Naturita Ridge areas as a result of removing livestock competition.

Approximately 24,000 acres of woodland previously maintained in herbaceous vegetation for livestock could be available for intensive woodland management.

Long-term, beneficial impacts to watershed conditions could occur. Both erosion and sediment yield could be reduced through removing all livestock grazing from the planning area.

Decreased revenues are projected, but no significant socioeconomic impacts in the planning area are projected; however, individual operators would have the potential for severe impacts to their economic well-being.

Ecological Representation Subalternative. The Ecological Representation Subalternative was developed to display the different ecologic systems and supplemental values represented by four of the WSAs. Weber Mountain, Cross Canyon, McKenna Peak, and Dolores River Canyon WSAs would be recommended as suitable for designation as wilderness (subject to the manageability boundaries). These four WSAs all represent different ecologic systems currently not well represented in the National Wilderness Preservation System (NWPS) and which have significant supplemental values.

The potential impacts to all resources could be similar to those impacts discussed under the Resource Conservation Alternative, except that only Weber Mountain, Cross Canyon, McKenna Peak, and Dolores River Canyon WSAs (approx. 65,832 acres) would be recommended for wilderness designation. Therefore, fewer areas would be protected by wilderness designation and more areas would be available for more intensive management activities than under the Resource Conservation Alternative.

Resource Utilization Alternative

This alternative emphasizes development and use of economic values and minerals available on the public land. Multiple uses would continue; however, resource values contributing to the local or regional economy would be favored. This alternative would favor mineral exploration development, range utilization, and land disposal; projects relating to these uses would receive priority. The following discussion describes the overall management that would result from implementing this alternative.

One hundred and nine AMPs on approximately 850,000 acres would be developed at a estimated cost of $1.5 million for range improvements. Authorized livestock use in the planning area could significantly increase. The projected result of all adjustments would be an initial reduction of 19,819 AUMs (31%) from current active preference. In the long term, livestock use would be projected to increase to 90,109 AUMs, or 29 percent above current active preference. Implementing this alternative could result in significant, beneficial long-term impacts to livestock operators due to increases in livestock production.

Impacts of this alternative could be significant, long-term improvements in ecological vegetation condition covering the entire planning area. That portion of the area in excellent condition would remain unchanged, while the percentage in good condition would increase from 3 percent to 10 percent, and the percentage in fair condition would increase from 23 percent to 28 percent. Poor condition sites would decrease from 39 percent to 27 percent.

Wildlife habitat would be managed to support increased population levels of 24,000 deer and 3,000 elk. Pronghorn antelope would increase to 500 animals and the reintroduction of 500 bighorn sheep in the Dolores River Canyon would be allowed. Protective stipulations would be provided for T&E species. An estimated $1 million would be necessary to complete the improvements and projected HMPs. Terrestrial wildlife habitat conditions would improve significantly over the majority of the planning area. T&E species would benefit from the provided protection.

Under this alternative, aquatic and riparian habitat would be improved on the following rivers and their tributaries (in priority order): the upper San Miguel, the upper Dolores, the lower San Miguel, the Upper Animas, and the lower Dolores. An estimated $1.26 million is projected to develop HMPs and implement necessary improvements. It is anticipated that long-term positive impacts on 400 miles of aquatic and riparian habitat could be realized.

Managing the Silverton SRMA would be continued. The Dolores River would be managed as an SRMA and an allocation system that encourages visitor use would be implemented. Recreation management plans for both SRMAs would be developed.

Protecting and enhancing recreation resources by management and development restrictions could have long-term, positive impacts to recreation and overall would continue to provide the settings and opportunities most desired by the public. Potential losses of wilderness characteristics and values would occur.

Seventy percent of the total acreage available for oil and gas consideration would be open for leasing and development under standard stipulations. Twenty-five percent of the total acreage would be available under seasonal restrictions to protect wildlife species, and approximately 4 percent would be subject to no-surface occupancy stipulations to protect wildlife, cultural resources, and recreation values. Less than 1 percent of the total acreage would not be available for leasing due to T&E wildlife species, cultural resources, and recreation values. Less than 1 percent of the total acreage would be closed to mineral entry. The following would be available for coal leasing: the Durango KRCRA, 54,000 acres (1.8 billion tons), the East Cortez KRCRA, 1,880 acres (13.3 million tons), and the Nucla KRCRA, 1,880 acres (33.8 million tons). Implementing this alternative could result in long-term, adverse impacts to mineral development due to withdrawals from mineral entry and to no leasing and no-surface occupancy stipulations.

This alternative would continue protection and management for important cultural sites and areas. Overall long-term benefits could occur due to protective withdrawals and stipulations on mineral development. However, site-specific, adverse impacts could occur due to mineral development in Cross, Cahone, and Squaw/Papoose canyons.

Under this alternative, land disposal (through sales, exchange, or title transfer) would be allowed for approximately 33,000 acres or 3.3 percent of the public lands in the planning area, a long-term impact which would improve management efficiency on all BLM-retained lands.

All wild horses in the planning area would be removed; negative impacts to public viewing could occur. Positive, long-term impacts could occur to vegetation, livestock grazing, and wildlife.

Intensive timber management on approximately 11,220 acres would be provided. The estimated allowable harvest would be 6.6 MMBF per decade. An additional 42,130 acres would be managed to provide woodland products, creating an estimated allowable harvest of 6.4 MMBF (12,800 cords) per decade. Insignificant production losses due to proposed and existing management could occur. Over the long term, improved management could lead to increased wood fiber production.

Intensive watershed management (approx. 50,000 acres) would be implemented to reduce erosion and sediment yields. Approximately 50,000 acres would be managed to reduce salinity in the Colorado River. Long-term significant decreases in erosion, sediment, and salinity yields could occur and municipal and domestic water sources would be protected.

Improving fire management in a natural ecological setting would occur and natural successional changes in vegetation communities would be enhanced.

Public lands would be designated 82 percent open, 10 percent limited, and 8 percent closed to ORV use.

Increased mineral and recreation revenues are projected; however, no significant socioeconomic impacts in the planning area would occur.

Current Management Alternative (No Action Alternative)

The Current Management Alternative reflects BLM's current management direction, policies, and existing land use plan decisions. It was assumed that no major policy changes would occur and that the same funding level and apportionment of funds for resource programs would continue. The following discussion describes the overall management that would result from implementing this alternative.

Intensive livestock management on 11 AMPs would be continued on approximately 304,000 acres. The estimated cost for maintaining existing projects is $200,000 from 1984 through 1994. The current active preference of 64,232 AUMs would continue for both the short and the long term. Livestock operators would realize no significant short- or long-term changes in grazing management or livestock production.

In the short term, current vegetation trends would continue. The overall quantity and quality of vegetation produced on public lands would remain essentially unchanged on some sites and in the long term would decline slightly on others.

Wildlife habitat would be managed to support the current population levels of 20,000 deer, 1,600 elk, and 175 pronghorn antelope. Protective stipulations for T&E species would be provided. An estimated $191,000 would be necessary to complete the improvements and HMPs projected under this alternative. Habitat conditions would remain static or they could decline in the long term since big game populations could also decline.

Some aquatic and riparian habitat could continue to decline; some could remain static or improve under this alternative. Significant beneficial impacts could occur on 94 miles of aquatic and riparian habitat due to intensive management under livestock and wildlife activity plans.

Managing the Silverton SRMA and the Dolores River Canyon would continue. Recreation management plans for both areas would be developed. Protecting and enhancing recreation resources by management and development restrictions could have long-term, positive impacts to recreation and would continue to provide the settings and opportunities most desired by the public. Potential losses of wilderness values could occur. The McElmo Rare Snake and Lizard Research Natural Area would continue to be managed.

Seventy-three percent of the total considered acreage would be available for oil and gas leasing and development under standard stipulations. Twenty-three percent of the total acreage would be available under seasonal restrictions to protect wildlife species and approximately three percent would be subject to no-surface occupancy stipulations to protect wildlife, cultural resources, and recreation values. Less than 1 percent of the total acreage would not be available for oil and gas leasing because of T&E wildlife species, cultural resources, and recreation values. Less than 1 percent of the area would be closed to mineral entry. Two existing coal leases on 430 acres (14.3 million tons) would continue. Impacts to mineral development under this alternative because of stipulations and restrictions are considered to be insignificant.

Protecting and managing important cultural sites and areas would continue. Overall long-term benefits could occur because of protective withdrawals and stipulations on mineral development. However, site-specific adverse impacts could occur due to increased mineral development in Cross, Cahone, and Squaw/Papoose canyons.

Land disposal (through sales, exchange, or title transfer) would be allowed on approximately 16,000 acres or 1.6 percent of the public lands in the planning area, a long-term impact which would improve the efficiency of management on all BLM-retained lands.

Wild horse populations would continue to increase from the current count of approximately 100 head in Spring Creek Basin and 24 head on Naturita Ridge, increases which could have locally significant adverse impacts to vegetation, livestock management, and big game habitat. In the long term, horse populations could decline in their viability.

Intensive timber management on approximately 9,540 acres of forest lands would continue. The estimated allowable harvest would be 5.6 MMBF per decade. Woodland products (firewood, posts, and poles) for public use would be provided. Insignificant production losses due to proposed and existing management could occur. Over the long term, improved management could lead to increased wood fiber production.

Continued high erosion and sediment yields could occur. In the long term, salt loading in the Colorado River would remain unchanged. Municipal and domestic water sources would continue to be protected.

Public lands are currently 95 percent open, 5 percent limited, or less than 1 percent closed or ORV use.

No significant socioeconomic impacts are currently occurring in the planning area.

Purpose and Need

The San Juan-San Miguel Resource Management Plan/Environmental Impact Statement (RMP/EIS) is being prepared to provide a comprehensive framework for managing and allocating public land and resources in BLM's San Juan and portions of the Uncompahgre Basin resource areas, covering the southwestern corner of Colorado, and portions of New Mexico and Utah. In the future, the BLM plans to have the San Juan Resource Area (SJRA) office manage all these public lands; thus, they were incorporated into this planning area so that this RMP will cover one resource area.

The contents of this plan are focused on resolving nine key issues that were developed with public input in 1983 (see Introduction, Planning Issues). In addition, several statutory or court-ordered requirements will be met when the decisions proposed in this plan are approved. As required under Section 603 of the Federal Land Policy and Management Act of 1976 (FLPMA), this document analyzes preliminary wilderness suitability recommendations for eight Wilderness Study Areas (WSAs). For these WSAs only, the RMP will preliminarily recommend whether they are suitable or nonsuitable for inclusion in the National Wilderness Preservation System (NWPS). These recommendations will be reported through the Director of the BLM to the Secretary of the Interior and to the President. Designation of an area as wilderness can only be made by Congress.

This RMP/EIS also analyzes alternatives for livestock grazing on public land, as required under a court-ordered agreement based on a 1973 lawsuit filed against the BLM by the Natural Resource Defense Council (NRDC).

This planning action serves to consolidate and update land use planning guidance currently contained in three Management Framework Plans (MFPs) that were prepared in the BLM's Montrose District between 1971 and 1981. In some cases, the existing plans consist of partially completed documents that were never formally adopted by the BLM. Thus, for some portions of the planning area, this RMP will provide the first comprehensive management guidance to be approved by the BLM.

This document will address possible future management of the area for the next 10 or more years. When necessary, revisions will be completed on the RMP to keep it current with resource management needs and policies.

Setting

The planning area in southwestern Colorado considered in this RMP is comprised of public lands in Montrose, Montezuma, La Plata, Dolores, Archuleta, San Juan, San Miguel, and Mesa counties in Colorado. In addition, parts of Rio Arriba County, New Mexico, and San Juan County, Utah, are contained in the planning area. The area contains approximately 994,000 acres of public land, with an additional 297,000 subsurface (mineral) acres. The vast majority of the public lands are contained in the northwest and southwest portions of the planning area. The land pattern strongly influences land management options. The population of the area is centered in the southern portion of the area (Cortez and Durango) away from the large block of public land.

The San Juan Resource Area has total multiple use planning responsibility for the New Mexico portion of the planning area. The portions of San Juan County, Utah, in the planning area are two WSAs that are adjacent to Colorado's WSAs. Planning for these areas relates only to their suitability or nonsuitability for wilderness.

Planning Process

The BLM RMP process consists of nine basic actions. The planning actions described in the regulations and used in preparing this plan are described below.

Identifying the Issues

This step is intended to identify resource management concerns and needs and resource use, development, and protection opportunities for consideration in the RMP (completed in the summer of 1983).

Developing Planning Criteria

Planning criteria guides the development of the RMP. They ensure that the plan is tailored to the issues and that unnecessary data collection is avoided. They are generally based on applicable laws, policy, guidance from the BLM Director, and the results of public participation.

Inventory Data and Information Collection

Various kinds of issue-related data are collected to complete the process, accomplished through gathering field data and researching and analyzing existing data.

Analyzing the Management Situation

This step includes a description of current BLM management practices, a discussion of existing problems and opportunities for solving them, and a consolidation of existing data that are needed to analyze and resolve the identified issues.

Formulating the Alternatives

During this step, several complete, reasonable resource management alternatives are prepared, including one for no action and several that strive to resolve the issues while placing emphasis on either environmental protection or resource production.

Estimating Effects of Alternatives

The effects of implementing each alternative are estimated to allow a comparative analysis of impacts.

Selecting the Preferred Alternative

Based on the information generated during Step 6, the BLM District Manager identifies a preferred alternative. The draft RMP/EIS is then prepared and distributed for public review.

Selecting the RMP

Based on the results of public review and comment, the BLM District Manager will select a proposed RMP and it will be published along with a final EIS. A final decision is made after a thirty-day appeal period on the final EIS.

Monitoring and Evaluating

This step involves collecting and analyzing resource data to determine the plan's effectiveness. Monitoring continues from the time the RMP is approved until changing conditions require a revision of all or part of the plan.

Issues and Criteria

Issue-Driven Planning

The BLM planning regulations generally equate land use planning with problem solving or issue resolution. An issue may be defined as an opportunity, conflict, or problem regarding the use or management of public lands and resources. Obviously not all issues are capable of resolution through land use planning but may instead require changes in policy, budgets, or legislation.

As a practical matter, issue-driven planning means that only those aspects of current management that are felt to be at issue are examined through formulating and evaluating alternatives. The nine issues addressed in this document were identified based on the judgment of planning team members, interagency consultation, public and State government input, and review by BLM managers. Table I-1 discusses those nine issues (not listed in a priority order).

Table 1-1. Issues and Planning Criteria for the San Juan-San Miguel RMP.

Planning Issue	Management objective	Needed decision	Planning criteria
Lands	Make public lands available for public needs.	Identify public lands unsuitable for major Rights-of-Way (ROW) corridors.	Unsuitable areas may include WSAs, some critical wildlife areas, significant scenic areas and coal deposits, and important cultural, recreation, and timber areas. Exceptions to the above may be allowed with proper analysis and mitigation.
	Identify tracts for possible future disposal.	Identify specific public lands for possible future sales, exchanges, or for Recreation and Public Purposes (R & PP).	Disposal criteria include: (1) meets community needs; (2) public land has physical capabilities to support desired action; (3) could other land meet needs; and (4) does public land have significant values (i.e., cultural, mining claims, etc.).
Mineral Development	Provide for mineral development.	Identify areas available for possible future coal leasing.	Criteria include: (1) coal reserves have high to medium development potential within a Known Recoverable Coal Resource Area (KRCRA); (2) areas should be screened against coal unsuitability criterion; (3) demand for coal should be considered, both present and potential; and (4) coal's compatibility with other surrounding land uses.
		Identify possible mitigating measures for areas of intense mineral activity.	Mitigating measures should: (1) limit or eliminate the impacts within reasonable environmental and economic limits; and (2) protect nationally significant resources from mineral development.
Vegetation Resources	Manage use within vegetation resource capacity on a sustained yield basis.	Identify kinds of livestock, levels of use, season-of-use, and locations of livestock use.	Consideration will be given to: (1) capability of vegetation to sustain existing and future grazing uses; (2) intensifying management that is needed to benefit livestock, wildlife, wild horses, and vegetation; (3) needs of soil, watershed and vegetation; (4) demand for forage; (5) needs for vegetation treatments; (6) livestock industry's dependence on public land; (7) public's dependence on public land for wildlife-oriented recreation; (8) wildlife's dependence on public land; (9) public's dependence on and demand for forest products; and (10) forested lands' capability to sustain use.
	Maintain or improve range condition and trend.	Determine how many and where wild horses and necessary forage for a healthy herd will be managed.	
	Provide increased livestock forage to contribute to economic stability.		

Table 1-1. (continued)

Planning issue	Management objective	Needed decision	Planning criteria
Vegetation Resources (continued)		Implement management actions to protect riparian and aquatic resources and watershed values.	
		Identify management actions by allotment (i.e., range improvements, monitoring, etc.).	
		Identify management actions to improve wildlife habitat such as use levels, forage needs, wildlife introductions, etc.	
	Determine allowable harvest for timber and woodland species.	Determine productive forest areas to be managed.	
		Establish guidelines for timber and woodland disposal.	
Soils and Water	Improve or maintain water quality and quantity on public lands.	Identify sources of water pollution and measures that will be taken to improve water quality.	Water resource management should: (1) give priority to water quality problem areas; (2) consider cost and effectiveness of management actions for reducing degradation.
Cultural Resources	Determine management direction for important cultural sites and areas.	Identify cultural sites that will be developed, protected, or stabilized and interpreted for public use and research.	Consider: (1) the capability of site to sustain use; (2) need for additional management as well as needs for additional sites in area; (3) accessibility for public use; and (4) availability of other sites on public or private lands.
		Determine special designations or management guidelines for cultural sites.	Consider: (1) need for protection not afforded under existing laws; and (2) other multiple use values and impacts to them.

Table 1-1. (continued)

Planning Issue	Management Objective	Needed Decision	Planning Criteria
Special Management Areas	Ensure availability of recreation opportunities.	Designate in the RMP lands that are open, closed, or limited to ORVs.	Consider: (1) types of resource damage and user conflicts between ORV uses and other resource values; (2) whether ORV limits or closures will resolve conflict; and (3) whether important wildlife, recreation, cultural, and wilderness values will be protected from ORV uses.
		Develop management guidelines for the Dolores River SRMA.	Consider: (1) The Wild and Scenic River study data; and (2) the implications of the McPhee Dam on future management direction.
		Develop management guidelines for the Silverton SRMA.	Management direction from Gunnison Basin and the American Flats-Silverton Management Framework Plan (1980) will be used as basis for future decisions.
		Identify other recreation management opportunities in area.	Consideration will include: (1) physical capability of land to support desired recreation activity; and (2) the availability of other public or private opportunities.
	Recognize need for protective measures (i.e., withdrawals, special designation, etc.).	Review existing Research Natural Area to see if still appropriate and determine need for new ACEC.	Review shall include: (1) consideration of important regional or national values for ACEC designation; and (2) manageability of the area; and (3) scarcity of the resource.
Wilderness Resources	Evaluate wilderness characteristics and management alternatives.	Identify which of the eight WSAs or portions suitable for inclusion in the NWPS and those areas not suitable for wilderness.	Evaluation should include: (1) BLM's wilderness study policies and guidelines with principal criteria being wilderness values and manageability; and (2) coordination of studies with other Federal, State, and local agencies.
		Identify alternative management for those areas not recommended as suitable.	Consider: (1) other resource values under principles of multiple use management; and (2) environmental impacts of nonwilderness management.

Table 1-1. (continued)

Planning issue	Management objective	Needed decision	Planning criteria
Fire	Provide direction that places increased emphasis on fire's role in the ecosystem.	Identify management to enhance fire program on public land to improve and enhance multiple use management opportunities.	Consider: (1) capability of land to improve through fire management; (2) protection of improvements on public and private land; (3) need to change vegetation communities to benefit resource values; and (4) using existing Paradox Limited Fire Suppression Plan as baseline data.
Access	Provide for public and administrative access.	Determine need for access for management of public lands.	Consider: (1) access to public land where physically and economically feasible; and (2) use of administrative access to protect fragile resources.

Source: BLM Data 1984.

CHAPTER ONE -

ALTERNATIVES

CHAPTER ONE
ALTERNATIVES

Introduction

Four land use plan alternatives, including the BLM's preferred alternative, are detailed in this chapter to provide readers and decisionmakers with a means of examining actions and resultant impacts. The four alternatives described are: Resource Conservation, Resource Utilization, Current Management, and the Preferred Alternative.

A Wilderness Technical Supplement to this RMP/EIS was also developed and discusses in more detail each WSA and their alternatives and individual resources, which include: All Wilderness, Wilderness Manageability, Conflict Resolution (Dolores River Canyon and McKenna Peak WSAs only), No Wilderness, and the Preferred Alternative.

Two subalternatives have also been developed to analyze the special problems associated with livestock grazing and wilderness; they are subalternatives to the Resource Conservation Alternative. The No Livestock Grazing Subalternative would involve eliminating livestock grazing from all public land in the resource areas. An Ecological Representation Subalternative was developed to display the different ecological systems and supplemental values represented by four of the WSAs, including Weber Mountain, Cross Canyon, McKenna Peak, and Dolores River Canyon WSAs, which would be recommended as suitable for designation as wilderness (using the Wilderness Manageability Alternative boundaries). The Wilderness Technical Supplement contains a detailed discussion of the Wilderness Manageability Alternative for each of these four WSAs.

It is assumed that the plan will be implemented within 10 years from approval; this period is subject to adequate budget and staffing available to complete the tasks. Table 1-ii at the end of Chapter One shows a summary of the four alternatives and their effects categorized by resource.

Management Guidance Common to All Alternatives

The following management guidance is applied to and is a part of all alternatives considered and also provides background information explaining how this plan fits into other program actions such as coal leasing, livestock management, etc.

Soils, Water, and Air Program

Soils, water, and air resources will continue to be evaluated on case-by-case bases as a part of project level planning. Such an evaluation will consider the significance of the proposed projects and the sensitivity of soils, water, and air resources in the affected areas. Stipulations will be attached as appropriate to ensure compatibility of projects to soils, water, and air resource management. (Appendix 6 shows an example of general Best Management Practices [BMPs].) Soils will be managed to maintain productivity and to minimize erosion.

Water quality will be maintained or improved in accordance with State and Federal standards, including consultation with State agencies on proposed projects that may

significantly affect water quality. Management actions on public land within municipal watersheds will be designed to protect water quality and quantity. Management activities in aquatic and riparian areas will be designed to maintain or, where possible, improve riparian habitat condition. Roads and utility corridors will avoid aquatic and riparian areas to the extent practicable.

Air quality degradation is minimized through compliance with Federal, State, and local regulations and implementation plans. For example, air quality impacts from prescribed burns are limited by BLM Manual Section 7723 which describes Air Quality Maintenance Requirements and requires a State-approved open burning permit prior to implementation. Additional management activities include monitoring, analysis, and impact mitigation on a project-specific, case-by-case basis.

Energy and Minerals Program

The following principles will guide BLM in managing mineral resources on public lands:

1. Except for Congressional withdrawals, public lands shall remain open and available for mineral exploration and development unless withdrawal or other administrative action is clearly justified in the national interest.

2. BLM actively encourages and facilitates the development by private industry of public land mineral resources so that national and local needs are satisfied and economically and environmentally sound exploration, extraction, and reclamation practices are provided.

3. BLM will process mineral applications, permits, leases, and other use authorizations for public lands in a timely and efficient manner.

4. BLM's land use plans and multiple use management decisions will recognize that mineral exploration and development can occur concurrently or sequentially with other resource uses. BLM further recognizes that land use planning is a dynamic process and decisions will be updated as new data are evaluated.

Oil and Gas Leasing. As a general rule, public land is available for oil and gas leasing. In many areas, oil and gas leases will be issued with only standard stipulations attached. In other areas, leases will have special stipulations attached when issued to protect seasonal wildlife habitat and(or) other sensitive resource values. In highly sensitive areas, where special stipulations are not sufficient to protect important surface resource values, no-surface occupancy stipulations or no leasing will be implemented. Examples of standard and special stipulations are located in Appendix 4. The various alternatives contain descriptions of the oil and gas leasing stipulations by the above-mentioned categories.

When the commodity falls within a Known Geologic Structure (KGS), it is disposed of by leasing through competitive bidding. Areas outside of KGSs are disposed of by noncompetitive leasing.

Locatable Minerals. All public land is open to mineral entry and development unless previously withdrawn. Mineral exploration and development on public land will be regulated under 43 CFR 3800 to prevent unnecessary and undue degradation of the land.

Common Variety Mineral Materials. Applications for removing common variety mineral materials, including sand and gravel, will continue to be processed on a case-by-case basis. Stipulations to protect important surface values will be attached based on interdisciplinary review of each proposal.

Coal. The Federal coal leasing process is just beginning with this land use planning phase. Upon completing the plan, a site-specific activity plan for lease tracts will be developed. This site-specific data will be used in a regional coal EIS that will be developed to identify impacts and mitigations. Appendix 4-B contains examples of possible mitigating measures for coal leasing.

Coal Unsuitability Criteria and Surface Owner Consultation

BLM is required to review areas containing Federal coal to determine which lands are unsuitable for all or certain stipulated methods of coal mining. BLM procedures for assessing unsuitability are defined in the planning regulations (43 CFR 1601.6-6) and coal regulations (43 CFR 3461). The 20 criteria addressing unsuitability for the surface mining of coal were applied to the Nucla, East Cortez, and Durango Known Recoverable Coal Resource Areas (KRCRAs; see Tables 1-2A and 1-2B). The Nucla KRCRA includes 2,080 acres; East Cortez KRCRA, 2,840 acres; and Durango KRCRA, 143,780 acres (82,440 acres, BLM and 61,340 acres, U.S. Forest Service). The complete assessment report is available in the San Juan Resource Area Office.

Surface owners in the planning area, located along the coal outcrop from Durango to the Lemon-Vallecito area, were consulted for their preferences for or against surface mining on their lands where the Federal government holds the mineral estate (see Table 1-3).

The responses indicating opposition to surface mining expressed varying concerns, including water quality, maintaining the natural setting, other general environmental factors, and numerous private homes and subdivisions located over the mineral resources. More than 80 percent of surface owners contacted (in the Texas Creek, Bear Creek, Wilson Gulch, and Los Pinos River areas--all east of Durango) were opposed to surface mining of Federally-owned coal. Federal regulations require that, where a significant number of surface owners in an area have expressed a preference against mining those deposits by other than underground mining techniques, that area shall be considered acceptable for further consideration only for development by underground mining techniques. These areas will be considered as unsuitable for future surface mining due to surface owner preferences. The 2,120 acres involved here are all private surface/Federal minerals and surface mineable coal; they represent less than 1.4 percent of the Durango KRCRA.

Lands Program

Land Ownership Adjustments. Public land will be made available for disposal through sales or exchanges or both. Transfers to other public agencies will be considered where management efficiency would result. Minor adjustments involving sales or exchanges or both may be permitted based on applying specifically the criteria for land ownership adjustments.

Table 1-2-A. Unsuitability Criterion for Coal Mining (Summary).

Criterion no.	Criterion name	Exception application	Unsuitable acres: Durango KRCRA	Nucla KRCRA	East Cortez KRCRA
1	Federal Land Systems	No			
2	Rights-of-Way	Yes			
3	Buffer Zones	Yes			
4	Wilderness	Yes	10,440 1/		
5	Scenic Federal Lands	No			
6	Scientific Study Areas	No			
7	Cultural Resources	Yes			
8	Natural Areas	No			
9	Federally Endangered Species	Yes	2,600 2/		160
10	State Endangered Species	Yes	320 3/		
11	Eagle Nest Sites	Yes	4,180 4/		
12	Eagle Concentration Areas	Yes	640		
13	Falcon Nest Sites	Yes	2,600		
14	Migratory Birds	Yes	480 5/	600 7/	880 8/
15	State Resident Fish & Wildlife	Yes	18,510 6/		
16	Floodplains	Yes	480	280	
17	Municipal Watersheds	No			
18	National Resource Waters	No			
19	Alluvial Valley Floors	Yes	480	280	560
20	State Proposed Criteria	No			
	Surface Owner Consultation		2,120		
	Total unsuitable acres (with no duplication)		34,390	600	960
	Percent of total KRCRA 9/		38	29	34
	Total suitable acres		48,050	1,480	1,880

1/ Includes 800 acres in 11 and 700 acres in 15.
2/ Same acreage as in 13.
3/ Acreage also in 12, 14, and 19.
4/ Includes 1,480 acres in 9 and 160 acres in 10.
5/ Same acreage in 16 and 19.
6/ Includes 1,120 acres in 11.
7/ Includes 280 acres in both 16 and 19.
8/ Includes 560 acres in 19.
9/ See Chapter One narrative for total KRCRA acreages.

Note: For a more detailed analysis of the unsuitability criterion, see the San Juan/San Miguel Coal Unsuitability Report (available in San Juan Resource Area, Durango).

Table 1-2-B. Areas Unsuitable for All Methods of Mining (Summary).

Criterion no.	Criterion name	Acreage Durango KRCRA	Nucla KRCRA	East Cortez KRCRA
4	Wilderness	10,440 1/		
9	Federally Endangered Species	2,160		160
11	Eagle Nest Sites	2,800		
14	Migratory Birds		600 2/	800 3/
15	State Resident Fish & Wildlife	2,460		
16	Floodplains		280	
19	Alluvial Valley Floors		280	560
	Total acreages with no duplication	17,860	600	960
	Percent of total KRCRA	22	29	34

1/ Includes 640 acres in 11.
2/ Includes 280 acres in both 16 and 19.
3/ Includes 560 acres in 19.

Table 1-3. Surface Owner Preference for Coal Leasing in Planning Area.

	Number of responses	Percent of total responses
Against leasing	37	59
In favor of leasing	9	14
No response	17	27

Source: BLM Data 1984.

The criteria for land ownership adjustments will be considered in land reports and environmental assessments prepared for specific adjustment proposals. This list represents the major factors to be evaluated; they include threatened and endangered and sensitive species habitat; wetland and riparian areas; fisheries; nesting and breeding habitat for critical wildlife animals; key big game habitats (seasonal); developed recreation sites and recreation access sites; municipal watersheds; energy and potential

for minerals; sites that are eligible for inclusion on the National Register of Historic Places; legal land surveys, wilderness and areas being studied for designation as wilderness; and other statutorily authorized designations.

Other factors include how accessible the land is for public uses; the amount of public investments in facilities or improvements and the potential for recovering those investments; difficulty or cost of administration; how suitable the land is for management by another Federal agency; how significant the decision is in stabilizing local business, social and economic conditions, and lifestyles; authorized land users, including Recreation and Public Purposes (R & PP) leases, withdrawals, or other leases or permits. Two more factors are: (1) how consistent the decision is with cooperative agreements and plans of other agencies, and (2) suitability and need for change in land ownership including community expansion or economic development, such as industrial, residential, or agricultural (other than grazing) development.

Land Laws and Policies. The lands program in the planning area is primarily concerned with the authorization of uses on the public lands by others, including private parties, state, county, and other Federal agencies. The objective is to insure compatibility of the various multiple uses and environmental protection of resources. Certain parcels of public land will be considered for disposal or title transfer when (1) the lands are determined to be not needed for a Federal project or a resource management activity; (2) retention of the lands is not in the national interest; or (3) the lands are not cost efficient under BLM management. Disposal of the public lands may be accomplished by sale, exchange, State Indemnity Selection, or title transfer pursuant to any applicable Federal authority.

New Withdrawals. Process new withdrawals on a case-by-case basis, using existing guidance to determine if formal withdrawal is needed.

Withdrawal Review. Reviewing other agency withdrawals that will be continued, modified, or revoked will be completed by 1991. Upon revocation or modification, part or all of the withdrawn land will revert to BLM management. Current BLM policy is to minimize the acreage of public land withdrawn from mining and mineral leasing, and, where applicable, to replace existing withdrawals with ROWs, leases, permits, or cooperative agreements.

Utility and Transportation Corridors. All public land is generally available for utility and transportation corridor development; exceptions will be based on considering the criteria listed below. Applicants will be encouraged to locate new facilities within existing corridors to the greatest extent possible. Public land within areas identified as unsuitable will not be available for utility and transportation corridor development (see Planning Criteria). Exceptions may be permitted based on considering: types of and needs for proposed facilities; conflicts with other resource values and uses, including potential values and uses; and availability of alternative and(or) mitigation measures.

Recreation Program

General. A wide range of outdoor recreation opportunities will continue to be provided for all segments of the public, commensurate with demand. Trails and other means of public access will continue to be maintained and developed where necessary to enhance recreation opportunities and allow public use. Developed recreation facilities receiving

the heaviest use will receive first priority for operational and maintenance funds. Sites that cannot be maintained to acceptable health and safety standards will be closed until deficiencies are corrected.

Recreation opportunities will continue to be evaluated on a case-by-case basis as a part of project level planning. Such evaluation will consider the significance of the proposed project and the sensitivity of recreation resources in the affected area. Stipulations will be attached as appropriate to assure that activities are compatible with recreation management objectives.

Travel Planning and Motorized Vehicle Use. Travel planning, including the designation of areas open, limited, and closed to motorized vehicle access, will remain a priority for public land. Public land within areas identified as open to motorized vehicle use generally will remain available for such use subject to existing laws and regulations. Public land within areas identified as limited to motorized vehicle use generally will receive priority attention during travel planning. Major limited categories include: number and types of vehicles, time or season of vehicle use, permitted or licensed use only, areas limited except existing (or designated) roads (or ways) and trails, and other limitations as needed by management objectives.

Public land within areas identified as closed to motorized vehicle use will be closed yearlong to all forms of motorized vehicle use. Exceptions may be allowed in WSAs based on applying BLM's Interim Management Policy (BLM Revised, July 12, 1983).

Visual Resources

In addition to specific areas identified in the plan alternatives, visual resources will continue to be evaluated as a part of activity and project planning; this evaluation will consider the significance of the proposed projects and their visual impact to the landscape. Stipulations will be implemented to assure that projects are compatible with management objectives established in the RMP (see Appendix 2).

Cultural Resources

In addition to specific areas identified in the plan alternatives, cultural resources will continue to be inventoried and evaluated as part of project level planning. Recommendations will be generated from the evaluations and will consider all impacts to the proposed projects and the important cultural resources in the affected areas. Stipulations will be attached to assure that projects are compatible with management objectives for cultural resources. Avoidance will continue to be the primary measure used.

Wilderness Resources

WSAs will continue to be managed in compliance with BLM's Interim Management Policy (BLM Revised July 12, 1983) until they are reviewed and acted upon by Congress. Areas being studied for wilderness will be managed to meet the nonimpairment standard. In cases where valid existing rights occur, areas will be managed to prevent unnecessary and undue degradation of the land.

Public land within areas added by Congress to the NWPS will be managed in compliance with BLM's Wilderness Management Policy and the Wilderness Act of 1964. Site-specific

wilderness management plans will be developed for such areas within two years after designation by Congress. Areas reviewed by Congress but not added to the NWPS will be managed in accordance with applicable guidance provided by this RMP.

Forestry

Public land within high priority forest management areas will be available for a full range of forest management activities. Major forest activity plans generally will be required prior to initiating those activities in such areas. Pending completion of the activity plan, timber and woodland stand treatments will be evaluated by an environmental assessment and implemented on a case-by-case basis.

Forested areas within other emphasis areas will also be available for a full range of forest management activities; plans will be modified to be compatible with the management emphasis areas. Firewood harvesting will be permitted on most accessible forest land that is available for harvesting forest products.

Range

General. The planning area is a complex ecosystem composed of plant and animal communities and basic soil types, all responsive in one way or another to natural processes such as rain, wind, sunlight, and man's activities. No single element in the range ecosystem is so readily managed and with such far-reaching effects as is vegetation. Consequently, maintaining or improving the vegetation component of this ecosystem is the key to enhancing the resource values of the planning area to permit a balanced mix of uses to ensure sustained yield. The components of the rangeland program are familiar ones; they have been part of the program for some years. The main emphasis of the range program is considered in the following components:

Allotment Categorization. All grazing allotments in the planning area have been assigned to one of three management categories based on present conditions, potential for improvement, whether other resource conflicts exist, and what opportunities exist for positive economic return on public investments (see Appendix 8).

The "M" category allotments generally will be managed to maintain current satisfactory resource conditions; "I" allotments generally will be managed to improve resource conditions; and "C" allotments will receive custodial management to prevent resource deterioration.

Allotment-Specific Management Actions for the Improvement ("I") Category. Multiple use management actions have been developed for each allotment in the "I" category (see Appendix 9-A). Future management actions, including developing AMPs, will be tailored to meet these objectives. However, the priorities assigned to achieving objectives for wildlife habitat, watershed, vegetation condition, and livestock forage production differ between alternatives.

Allotment Management Plans (AMPs). Implementing the recommended actions for the planning area is guided by a series of functional activity plans, which include Herd Area Management Plans for wild horses, HMPs for wildlife, and AMPs for livestock grazing. Each plan explicitly details planned programs and management actions designed to accomplish proper land and resource management for the full mix of public uses. Specifically, AMPs,

prepared in consultation, cooperation, and coordination with the operator or other affected interests, are documents which prescribe the manner in and extent to which livestock grazing is conducted and managed to meet multiple use, sustained yield, economic and other needs and objectives as determined through the land use plan.

Monitoring. Initial stocking rates are based upon the best data currently available. Closely monitoring grazing systems and progressing toward improvement are needed for BLM to be able to make periodic adjustments. A monitoring program will be established in the planning area to determine whether the goals and objectives of the RMP are being achieved effectively by the management systems. When undesirable and unintended changes in resource values are discovered and the causes are determined, corrective action will be taken. BLM Instruction Memorandums WO-82-292 and WO-82-650 discuss the applications of rangeland monitoring in more detail.

Livestock Use Adjustments. Livestock use adjustments are most often made by changing one or more of the following: the kind or class of livestock grazing the allotment, the season of use, the stocking rate, or the grazing pattern. For each of the four alternatives presented in this RMP, initial and potential carrying capacities have been estimated for each allotment (refer to Appendix 9-E). Appendix 9-E also notes where adjustments in the season of use and the class or kind of livestock may be needed. While most livestock use adjustments will occur in the "I" allotments, use adjustments are permitted for allotments in "C" and "M" categories.

In reviewing the estimated initial carrying capacities and other recommended changes, it is emphasized that the proposed AUM figures are not final stocking rates. Rather, all livestock use adjustments will be implemented through documented mutual agreement or by decision. When adjustments are made through mutual agreement, they may be implemented once the Rangeland Program Summary has been through a public review period. When livestock use adjustments are implemented by decision, it will be based on operator consultation, range survey data, and resource condition monitoring. Current BLM policy emphasizes the use of a systematic monitoring program to verify the need for livestock adjustments proposed on the basis of one-time inventory data.

The Federal regulations that govern changes in allocation of livestock forage provide specific direction for livestock use adjustments implemented by decision (43 CFR 4110.3-1 and 43 CFR 4110.3-2). The regulations specify that permanent increases in livestock forage "shall be implemented over a period not to exceed five years...," and that decreases in livestock forage "shall be implemented over a five year period...." The regulations do provide for decreases to be implemented in less than five years when: (1) the downward adjustment is 15 percent or less of the "authorized active grazing use for the previous year"; (2) an agreement is reached to implement the adjustment in less than five years; or (3) a shorter implementation period is needed to sustain resource productivity.

If data acceptable to the BLM Area Manager are available, an initial reduction shall be taken on the effective date of the decision. The balance of the reductions would be taken in the third and fifth years following the effective date of the decision. If data are not available to support the initial reduction, a decision will be issued identifying the data needed and procedures to be used for arriving at the adjustments. Adjustments based on the additional data shall be implemented by a decision that will initiate the 5-year implementation period.

Range Improvements. Typical range improvements and the general procedures to be followed in implementing them are described in Appendix 9-F. The extent, location, and timing of such actions will be based on the allotment-specific management objectives adopted through the AMP process, interdisciplinary development and review of proposed actions, contributions from operators and others, and BLM funding capability.

All allotments in which range improvement funds are to be spent will be subjected to an economic analysis, which will be used to develop a final priority ranking of allotments to commit the range improvement funds that are needed to implement activity plans. The highest priority for implementation generally will be assigned to those improvements for which the total anticipated benefits exceed costs.

Grazing Systems. Types of system to be implemented will be developed in cooperation with the livestock operator and based on considering the following factors: allotment-specific management actions (see Appendix 9-D); resource characteristics, including vegetation potential and water availability; general management actions (see Appendix 9-D-1); operators needs; and implementations costs. Typical grazing systems available for consideration are described in Appendix 9-C.

Unallotted Tracts. Unallotted tracts generally will remain available for further consideration for authorized grazing, as provided for in the BLM grazing regulations (43 CFR 4110 and 43 CFR 4130). However, certain tracts not currently authorized for grazing use will remain unallotted.

Wildlife and Fisheries

General. Fish and wildlife habitat will continue to be evaluated on a case-by-case basis as a part of project level planning. Such evaluation will consider the significance of the proposed project and the sensitivity of fish and wildlife habitat in the affected area. Stipulations will be attached as appropriate to assure that projects are compatible with management objectives established in the RMP for fish and wildlife habitat. Habitat improvement projects will be implemented where necessary to stabilize and(or) improve unsatisfactory or declining habitat condition. Such projects will be identified through HMPs or coordinated resource management activity plans.

Seasonal Restrictions. Seasonal restrictions will continue to be applied where they are needed to mitigate the impacts of human activities on important seasonal wildlife habitat. The major types of seasonal wildlife habitat and the time periods when restrictions may be needed are shown in Table I-4.

Threatened, Endangered, and Sensitive Species Habitat. No activities will be permitted in threatened and endangered species habitat that would jeopardize their continued existence.

The Colorado Division of Wildlife (CDOW) and the U.S. Fish and Wildlife Service (USFWS) will be consulted prior to implementing projects that may affect threatened and endangered species' habitat. If such a situation is determined through the BLM biologic assessment process, then consultation with the USFWS will be initiated as per Section 7 of the Endangered Species Act of 1973, as amended.

Table 1-4. Seasonal Wildlife Restrictions.

Habitat	Restricted period
Elk and mule deer winter range	12/1 - 4/15
Elk calving grounds	5/1 - 6/15
Eagles' winter concentration area	12/1 - 4/15
Sage grouse strutting grounds	4/15 - 5/31

Source: BLM Data 1984.

Terrestrial Wildlife Habitat. Sufficient forage and cover will be provided for wildlife on their seasonal habitat. Forage and cover requirements will be incorporated into AMPs and will be specific to primary wildlife use areas. Generally, range improvements will be designed to achieve both wildlife and range objectives.

Aquatic and Riparian Habitat. Objectives to protect or improve aquatic and riparian habitat will become part of AMPs and HMPs. Management actions within flood plains and wetlands will include measures to preserve, protect, and, if necessary, restore their natural functions (as required by Executive Orders 11988 and 11990). Management techniques will be used to minimize degrading aquatic and riparian habitat. Bridges and culvert installations will be designed to maintain adequate passages for fish. Wildlife reintroductions and fish stocking proposals will be evaluated and recommendations will be made to the CDOW.

Cadastral Survey

Cadastral surveys will continue to be conducted in support of resource management programs. Survey requirements and priorities will be determined on a yearly basis as a part of the annual work planning process.

Fire Management

Until the Normal Year Fire Plan is updated, the primary fire protection objective will continue to be the control of all wildfires on or threatening public land during the first burning period. The modified suppression area in the northern part of the planning area will be continued. Expanding the modified suppression areas will be considered and evaluated when the Normal Year Fire Plan is reviewed. Prescribed burning will continue to be used in support of resource management objectives. The fire management plans developed for the eight WSAs within the planning area will continue to be used as management direction. All fire plans are available in the BLM's Montrose District Office.

Road and Trail Construction and Maintenance

Road and trail construction and maintenance will continue to be conducted in support of resource management objectives. Construction and maintenance requirements and priorities will be determined on a yearly basis as a part of the annual work planning process.

Investment of public funds for road and trail construction generally will be permitted only on land identified for retention in public ownership. Exceptions may be allowed where investment costs can be recovered as a part of land disposal actions.

Specific road and trail construction standards will be determined based on resource management needs; user safety; impacts to environmental values, including but not limited to wildlife and fisheries habitat, soil stability, recreation, and scenery; and construction and maintenance costs.

Management Direction

Management direction for the planning area is defined through the use of multiple use emphasis areas consisting of descriptions for specific management areas shown on the alternative maps and explained in Appendix 5. These descriptions contain multiple use management direction specifying which activities will be stressed to achieve goals and objectives. Specific activities allowed and prohibited will be specified for each multiple use emphasis area, which remains constant throughout the alternative. The emphasis areas are applied to different locations in the planning area under the alternatives. Management direction contained in the multiple use emphasis areas will be applied to the specific areas shown on the alternative maps. The specific multiple use emphasis areas were developed to respond to planning issues and resource needs. The following narrative contains a discussion of the emphasis areas, followed by a description of the alternatives describing the overall management that would result from applying the multiple use emphasis areas in that particular alternative.

Emphasis Area A--Livestock Management. Management direction will emphasize increasing forage and livestock production on a sustained yield basis. Emphasis is upon increasing forage, red meat and animal fiber production and improving forage composition and watershed conditions. Significant investments will be made in range improvements which will be multiple use oriented (i.e., wildlife, watershed, etc.). Investments for other resources will be minimal, although resource management activities compatible with livestock production will continue. Dispersed recreation opportunities will continue. Woodland products and timber will be made available. Wildlife habitat development generally will not be emphasized. Fire will be used to enhance forage production.

Emphasis Area B--Wildlife. Management direction will emphasize achieving and maintaining the best possible habitat conditions for fisheries and wildlife. Emphasis will be upon increasing aquatic and terrestrial wildlife habitat capability, improving stream and watershed conditions and providing a high degree of vegetation diversity. Investments for wildlife habitat improvements could be high in certain areas. Woodland products and timber will be available and dispersed recreation opportunities will continue. Livestock management will be of an intensity to utilize available forage and maintain forage vigor while not degrading wildlife habitat. The number or season-of-use for livestock may be reduced in some areas.

Emphasis Area C--Recreation. BLM's recreation program is structured to the intensity and type of recreation management required. There are two primary types of recreation management situations which are recognized and which guide the direction of management emphasis in the RMP area. The first, Special Recreation Management Areas (SRMAs), occurs where recreation is defined and recognized as the principal management objective. The

second situation, Extensive Recreation Management Areas (ERMAs), occurs where recreation is not the principal management objective but may be an issue or concern of some significance in multiple use management for the area. This is consistent with BLM's role in accommodating the dispersed, largely unstructured recreation that typifies the large expanses of public land in the San Juan RMP area.

The primary management goal is to ensure the continued availability of outdoor recreation opportunities which the public seek and which are not readily available from other public or private entities. Secondary goals include protecting resources, meeting legal requirements for visitor health and safety, and mitigating resource user conflicts involving recreation.

Recreation objectives are to provide dispersed and resource-dependent types of recreation opportunities such as cross-country skiing, hunting, hiking, boating, jeeping, and fishing and to deal with the limited number of situations which require special or more intensive types of recreation management. Investments will be concentrated in SRMAs and in those ERMAs where recreation program goals apply. Management objectives would include major investments in facilities and visitor management. Where recreation is not the principal management objective, management direction will largely emphasize the provision of access and visitor information and protecting site resources from user damage.

Emphasis Area D--Wilderness. Management direction will allow for wilderness management in accordance with the Wilderness Act of 1964 (78 Stat. 890; 16 USC 1131-1136). The objective of management is to provide predominantly untrammeled, natural environments for the physical, biologic and social components of wilderness. The physical and biologic components are managed so that natural processes are unimpeded by human activities or use. Natural processes, including naturally occurring fire, soil erosion and insect and disease cycles, proceed essentially unrestricted by man. Emphasize high levels of solitude, few party encounters, and high opportunities for challenge, risk, and self-reliance. Human travel is cross country or by use of a trail system. Recreation use will be consistent with management of wilderness resources or it will be restricted or prohibited when or where needed.

Emphasis Area E--Mineral Development. Management direction will emphasize mineral development on the public lands. Mineral values indicate that significant reserves of valuable minerals are present and that development is either currently ongoing or will occur within the near future. Other resource uses will occur to the extent that they are compatible with the mineral development. Limited expenditures of public resources will be used in developing the present land resources. Livestock grazing will continue, wildlife habitat will be maintained where feasible, and cultural resources will receive the protection currently afforded by law.

Emphasis Area F--Cultural Resources. Management direction will emphasize the preservation, management, and use of the cultural resource properties found within the area. Emphasis will be on protecting the soils, vegetation and wildlife resources to enhance the natural environment of the area and hence the cultural resources setting. Mineral resources will be developed while constrained by existing laws, policy & regulations pertaining to cultural resources. Other resource and land management activities will be constrained to avoid conflict with objectives for preservation, protection, and development.

Emphasis Area G--General Natural Resource Management. Management direction for these areas will consist of general multiple use as prescribed in FLPMA (1976). The resource values contained in these areas are not significant to the degree that a dominant use exists. Management guidance will consist of existing laws, policy, and manuals concerning each resource program.

Emphasis Area H--Public Land Disposal. Management of these areas will be for the disposal of the public lands; these areas will be subjected to additional screening and clearances before any tracts identified for disposal in this plan may be transferred from BLM control. These activities include mineral assessment, cultural resource clearances, environmental analysis, appraisal and similar site-specific actions. Little or no public funds will be spent upon these tracts for resource management; funds would only be spent to correct public health and safety problems or to correct severe resource conditions that cannot be allowed to continue.

Emphasis Area I--Wild Horses. Management direction will emphasize managing the wild horse herds present on public land by providing necessary forage and water. Some investments would probably occur to enhance the habitat for the horses and also to reduce conflicts with other uses in the area. Wild horse management plans will be developed. Reducing livestock and possibly wildlife may need to occur to maintain forage production and vigor. Dispersed recreation, including wild horse viewing, will continue. Woodland products will be made available on a limited basis. Fire will be used to enhance forage production.

Emphasis Area J--Forestry and Wood Products. This emphasis is designed to increase the production and utilization of wood fiber, firewood, post and poles. Emphasis is upon improved wood production and utilization resulting from extensive modification of tree and other vegetation cover. Investments will be made for forest management activities. Investments in other emphasis areas that are commensurate with wood fiber production will be made. Opportunities will generally be moderate for wildlife management and for dispersed recreation. Livestock grazing will occur; however, disruptions may occur due to timber management actions or objectives.

Emphasis Area K--Soils and Water. Management direction will emphasize improving water quality and soil stability. Resource data indicate that significant water quality problems exist in some areas and management action may improve the existing situation. In addition, soil erosion or fragile soils exist that are in need of more intensive management. Other resource uses will occur to the extent that they are compatible with the soils and water program direction for the specific areas. Uses by surface-disturbing activities may be limited or denied to improve resource conditions. Livestock grazing will be allowed but possibly at a reduced level; ORV use would be limited or excluded. Other resources, such as wildlife, cultural, etc., would be protected or enhanced under this emphasis area.

Emphasis Area L--Areas of Critical Environmental Concern (ACECs). Management direction will emphasize the areas of public land where special management attention is required to protect from natural hazards such as erosion, fire, and weather: (1) important historic, cultural, and scenic values, and fish and wildlife resources and (2) human life and property. The guidance will provide special management attention that will protect important environmental resources and human life and property from those natural hazards. This management should be completed without unnecessarily or unreasonably restricting public land users from purposes that are compatible with such protection.

ALTERNATIVES CONSIDERED IN DETAIL

Introduction

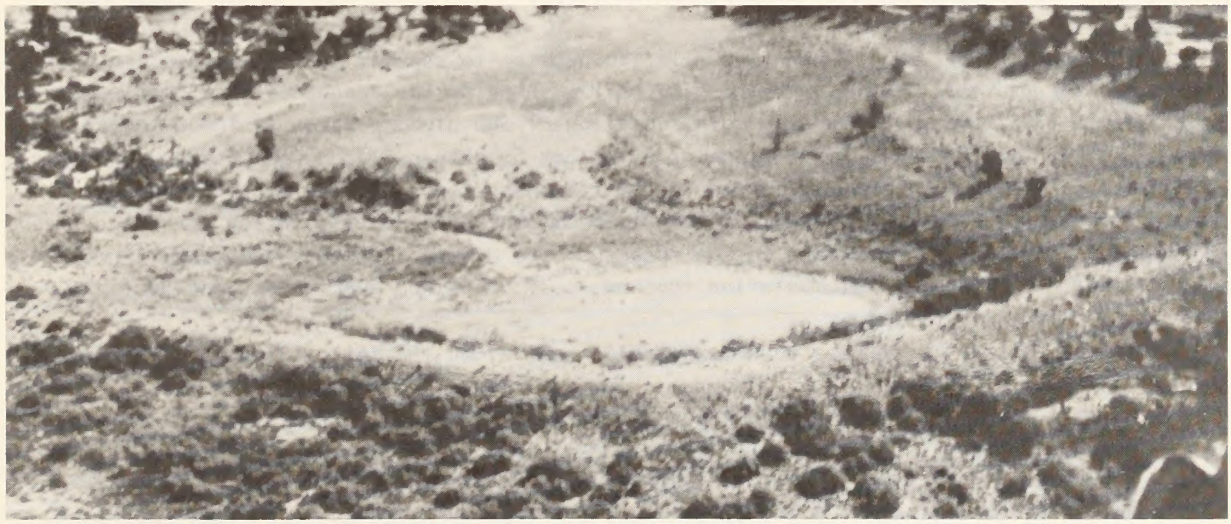
Four alternatives are considered in detail in Chapter One. Three of them--Current Management (no action), Resource Conservation, and Resource Utilization--were developed to explore a reasonable range of alternatives. The fourth alternative--the Preferred Alternative, incorporates portions of the Current Management, Resource Conservation, and Resource Utilization alternatives, and generally represents a balanced approach to resource management. These alternatives were developed as multiple use alternatives and are realistic, implementable and comply with CEQ and BLM planning regulations.

Resource Conservation Alternative

Theme

This ecologically preferred alternative (see map at back of this RMP) provides management direction to enhance nonconsumptive natural resource values. Multiple resource uses will continue in most areas; however, some areas may allow limited use or may be closed to specific resource uses, such as mineral development or access through sensitive wildlife areas. Projects which enhance resource values such as improving wildlife and riparian areas would receive priority. The following discussion describes the overall management that would result from implementing this alternative.

Livestock Management. Revise existing and develop new AMPs on 53 priority allotments (694,000 acres; see Appendix 9-E). Less intensive management will occur on remaining allotments. Range improvements (approx. $430,000 for implementation over a ten-year period; see Table 1-5) should be developed which include 47 miles of fence, 117 new water developments, and 6,700 acres of vegetation treatment (6,500 acres is maintenance of existing land treatments). These AMPs would generally be developed on the well-blocked public lands in the western and northern portions of the planning area.



BLM STOCK POND IN UPPER DISAPPOINTMENT VALLEY.

Table 1-5. Estimated Range Improvements/Costs.

Type of treatment (future)	Resource conservation	Resource utilization	Current management (no action)	Preferred
Fence to be built (mi)	47	80	0	77
Stock ponds to be built (no.)	99	129	0	129
Springs to be developed (no.)	10	10	0	10
Windmills to be installed (no.)	8	9	0	7
Vegetation treatments (ac)	200	14,400	0	10,100
Prescribed burn (ac)	0	2,300	0	2,000
Seeded (ac)	0	12,300	0	10,000
Existing treatments to be maintained (ac)	6,500	23,800	7,900	18,000
Total initial cost for all improvements	$430,000	$1.5 million	$200,000	$1.0 million

Source: BLM Data 1984.

Available forage in Animal Unit Months (AUMs) for livestock grazing would decrease 33 percent from current active preference under this alternative. These target livestock use levels may be adjusted in the future to reflect new resource information gathered by monitoring or other studies. Consultation with livestock operators before final decisions are issued will determine whether individual adjustments need to be phased in over a five-year period or whether such adjustments can be fully implemented in the first year. "I" category allotments will be given a priority for future investments in range improvements and monitoring. Allotments with the greatest potential for improvements of aquatic and(or) terrestrial wildlife habitat, watershed, and vegetation conditions and livestock forage production will be implemented first.

Wildlife--Terrestrial. Manage the wildlife habitat to support current population levels of deer and elk (20,000 deer and 1,600 elk). Provide for increased pronghorn antelope use (300) and allow for the reintroduction of 300 bighorn sheep in the Dolores River Canyon. See Table 1-6 for big game populations by alternative. Continue present management of Perins Peak and Paradox peregrine falcon eyries. Provide protective stipulation to bald eagle roosts and winter eagle concentration areas. Allow for the reintroduction of the river otters in the Upper Dolores River. Complete necessary improvements and HMPs for implementation (approx. cost, $358,000 over a ten-year period).

Wildlife--Aquatic. Improve aquatic/riparian habitat on the following priority areas:

- Upper San Miguel River and its tributaries (39 miles)
- Upper Dolores River (11 miles)
- Lower San Miguel River and its tributaries (67 miles)
- Animas River drainage (24 miles)
- Lower Dolores River and its tributaries (53 miles)
- Southwest quadrant streams (55 miles)

Develop needed HMPs and improvements for these six areas (including monitoring plans). Estimated costs for implementing habitat improvements over a 10-year period will be approximately $473,000 for approximately 249 stream miles (see Table 1-7).

Table 1-6. Estimated Big Game Population Levels By Alternative.

	Current	Resource conservation	Resource utilization	Preferred
Bighorn sheep	0	300	500	300
Elk	1,600	1,600	3,000	1,600
Mule deer	20,000	20,000	24,000	20,000
Pronghorn antelope	175	300	500	300

Source: BLM Data 1984.

Table 1-7. Estimated Terrestrial and Aquatic and Riparian Wildlife Improvements (Summary).

Type of treatment (future construction)	Current management	Resource conservation	Resource utilization	Preferred
Fence to be constructed (mi)	0	8	0	8
Erosion control structures (no. of gabions)	0	300	140	300
Water conservation structures (no. of guzzlers)	0	10	30	30
Stock ponds (no.)	0	25	0	0
Mechanical treatments (ac)	2,400	2,600	14,000	4,100
Prescribed burn (ac)	3,000	2,000	10,900	3,800
Seeded (ac)	4,100	5,700	17,700	7,800
Aquatic/riparian improvements (mi)	0	249	395	94

Source: BLM Data 1984.

Recreation. Continue management of the Silverton SRMA. Management emphasis will be directed toward managing recreation resources toward the resource-dependent end of the Recreation Opportunity Spectrum (ROS; see Appendix 3). The area will be managed for primitive, semiprimitive nonmotorized, and semiprimitive motorized recreation

opportunities. Typical facilities might include interpretive and directional signing. Continue ORV management as per existing American Flats/Silverton ORV plan (see Table I-8, ORV limitations by each alternative). Develop and implement a Recreation Area Management Plan for the Silverton SRMA that outlines specific needs for visitor management and facilities.

Manage the Dolores River as an SRMA per classifications determined by the BLM's ROS system. Manage the Dolores River from Bradfield Bridge to Dove Creek pump station for its semiprimitive nonmotorized setting opportunities; from Dove Creek pump station to Disappointment Creek for its semiprimitive motorized setting opportunities; from Disappointment Creek to Gypsum Valley Bridge under a roaded, natural ROS setting; and from Gypsum Valley Bridge to Bedrock for its primitive values and opportunity settings. Develop a Recreation Area Management Plan for the river which outlines specific management goals, objectives and management facilities needed. Typical facilities will include parking areas, campsites, toilets, boat ramps, and informational signing.

Wilderness. Recommend as suitable for wilderness the following WSAs: Weber Mountain, 6,303 acres; Menefee Mountain, 7,129 acres; Cross Canyon, 12,675 acres; Cahone Canyon, 9,040 acres; Squaw/Papoose Canyon, 11,122 acres; McKenna Peak, 19,593 acres; Dolores River, 28,366 acres; and Tabeguache Creek, 7,908 acres. Develop wilderness management plans for each WSA following designation by Congress.

Acquire private lands (40 acres) and split estate minerals (120 acres) within the Menefee Mountain WSA. Acquire Section 36 (State of Colorado) in Weber Mountain WSA. Acquire private land or easements between Bedrock and the northern boundary of the Dolores River Canyon WSA to improve management of the WSA. Acquire Section 36 (State of Colorado) adjacent to McKenna Peak WSA. Close cherrystem roads and ways in the following WSAs: Tabeguache Creek, and Cahone, Squaw/Papoose, and Cross canyons.

Minerals. Continue oil and gas leasing subject to standard or special stipulations (see Glossary). Standard stipulations would be provided on approximately 840,000 acres; seasonal wildlife stipulations on approximately 317,000 acres; no-surface occupancy stipulations on approximately 26,000 acres; and no leasing on approximately 108,000 acres (see Table I-9).

Continue cooperative management to protect surface resources on the Department of Energy (DOE) uranium lease tracts. Continue to assist in the processing of mineral actions. Provide for necessary permits for sand and gravel. Provide protective stipulations to protect the unique fossils in the Placerville area. Approximately 34,000 acres (943 million available tons) in the Durango KRCRA would be available for further consideration for coal leasing. The East Cortez (30 million tons) and Nucla (35 million tons) KRCRAs would not be available for leasing.

Cultural Resources. Manage the Anasazi Heritage Center as a cultural resource focal point for BLM in southwestern Colorado (see Chapter Two, Important Cultural Sites or Areas for detailed description). Provide for cultural management of: Lowry, Dominguez-Escalante, and Cannonball ruins, McLean Basin Towers; Hamilton and Mockingbird mesas; Squaw/Papoose, East Rock, Sand and Bull canyons; Painted Hand Ruin and Petroglyphs; Dolores Cave; Tabeguache Pueblo; and Indian Henry's Cabin. Cultural Resource Management Plans (CRMPs) should be developed to outline specific management objectives for each site

Table 1-8. ORV Limitations by Alternative (by acreage). 1/

Limitation	Current management	Resource conservation	Resource utilization	Preferred
Open	941,180	798,843	811,942	782,048
Limited to Existing Roads and Trails				
Recreation				
Silverton SRMA	51,180	51,180	51,180	51,180
Cultural				
Mockingbird Mesa	--	5,327	5,327	5,327
Bull Canyon	--	5	5	5
Indian Henry's Cabin	--	160	160	160
Sand Canyon		5,880		5,880
Soils and Water				
Disappointment Valley	--	--	46,000	46,000
Subtotal	51,180	62,552	102,672	108,552
Closed				
Recreation				
Lemon-Vallecito Area	--	5,900	--	5,900
Dolores SRMA		22,464	42,820	22,464
Weber Mountain	--	--	--	4,840
Menefee Mountain	--	--	--	5,000
Wilderness				
All eight WSAs	--	102,601	--	28,630 2/
Cultural				
Cross Canyon	--	--	13,913 3/	13,913 3/
Cahone Canyon	--	--	9,498	9,498
Squaw/Papoose Canyon	--	--	8,415 3/	8,415 3/
Tabeguache Creek Canyon	--	--	3,100	3,100
Wildlife				
Perins Peak	1,640	1,640	1,640	1,640
Subtotal	1,640	132,605	79,386	103,400
Total	994,000	994,000	994,000	994,000

1/ 994,000 acres in San Juan Resource Area.
2/ Specific to the Dolores River Canyon.
3/ Does not include Utah portion of WSA.
Source: BLM Data 1984.

and area. Provide protective oil and gas stipulations (no-surface occupancy) on Sand and East Rock canyons, Cannonball, Lowry and Dominguez-Escalante ruins, McLean Basin Towers, and Painted Hand Petroglyphs. Withdraw from mineral entry and provide no-surface occupancy for oil and gas leasing on: Dolores Cave, Tabeguache Pueblo, Bull Canyon Rockshelter, Painted Hand Ruin, and Indian Henry's Cabin. Limit public access in Mockingbird Mesa; Bull, Sand and East Rock canyons; and Indian Henry's Cabin to foot or horse only and restrict vehicle access to authorized vehicles only.

Table 1-9. Oil and Gas Leasing Stipulations By Alternative (Summary).

	Current management	Resource conservation	Resource utilization	Preferred
Standard stipulations	840,789 1/ 943,390 2/	839,879	913,850	878,225
Seasonal stipulations				
Wildlife	302,730	316,690	316,690	316,690
No-surface occupancy stipulations				
Wildlife	1,520	1,120	1,120	1,520
Recreation	34,680	21,600	50,230	21,600
Cultural	2,840	3,270	3,270	16,034
Total	39,040	25,990	54,620	39,154
No leasing				
Wilderness	--	102,601	--	28,630
Wildlife	1,480	1,480	1,480	1,480
Recreation	--	--	--	9,840
Cultural	4,360	4,360	4,360	16,981
Total	5,840	108,441	5,840	56,931
Wilderness (interim management stipulations)	102,601	--	--	--

1/With wilderness interim management.
2/Without wilderness interim management.
Note: See Appendix 4 for more detailed information.
Source: BLM Data 1984.

Public Land Disposal. Dispose of approximately 18,000 acres (through sales, exchanges, or any other title transfer means) throughout the planning area as indicated on Resource Conservation Alternative Map (see back of this RMP); this includes small, unmanageable, isolated parcels of land with limited public values scattered throughout the area.

Wild Horses. Intensively manage for 75 wild horses in the Spring Creek Basin. Manage for 50 horses in the Naturita Ridge area. Designate as horse ranges. Develop herd management plans and implement necessary range improvements.

Forestry and Wood Products. Provide for intensive timber management on approximately 7,930 acres. Estimated allowable harvest would be 4.7 million board feet (MMBF) per decade. An additional 35,170 acres would be managed to provide woodland products (firewood, posts, and poles, etc.). Estimated allowable harvest would be 5.3 MMBF (10,600 cords) per decade. Public land within set-aside areas (see Table 1-10) will not be available for planned forest product harvest.

Soils and Water. Provide protective management on 4,700 acres in Boulder Gulch watershed to protect water quality for Silverton's municipal water supply. Protect water quality in aquifers used for domestic and municipal purposes in the Dry Creek Basin and Tabeguache Creek watersheds.

Manage 78,000 acres in the following watersheds to reduce erosion and sediment yield: Disappointment, Gypsum, and Paradox valleys, Dry Creek Basin, Ross Fort Park, Broad Canyon, Mud Spring Draw, and Burn, Yellowjacket, Negro, Bridge, and Hovenweep canyons.

Table 1-10. Forest Set-Aside Areas within Planning Area.

Forest set-asides	Resource conservation	Resource utilization	Current management	Preferred
Dolores River Canyon area	311	104	104	104
Lemon/Vallecito areas	2,965	--	--	140
Menefee/Weber Mountain areas	120	--	120	120
Silverton area	12,078	12,078	12,078	12,078
TPCC (nonsuitable) 1/	20,042	20,042	20,042	20,042

Woodland set-asides	Resource conservation	Resource utilization	Current management	Preferred
Dolores River Canyon area	370	370	--	370
Range/chaining	23,970	23,970	--	23,970
WSAs	5,809	--	--	--
Wildlife	1,152	--	--	--
WPCC (nonsuitable) 2/	530,344	530,344	--	530,344

1/ TPCC = Timber Production Capability Classification.
2/ WPCC = Woodland Production Capability Classification.
Source: BLM Data 1984.

Manage 30,000 acres in Disappointment Valley and Yellowjacket Canyon to reduce salinity in the Colorado River system. Reclaim 20 pollution sources (from heavy metals) in the Upper Animas River drainage. Develop watershed management plans for all erosion and salinity areas detailing specific management goals and actions.

Two subalternatives were developed within the Resource Conservation Alternative, the No Grazing Subalternative and the Ecological Representation Subalternative. Management would be identical to the main alternative with some readily identifiable and specific expectations which are outlined below. The subalternatives were developed to analyze these management variations that would occur under this alternative.

No Grazing Subalternative. The No Grazing Subalternative was developed to analyze livestock grazing on public land and would involve removing all domestic livestock from all public lands within the planning area. All other programs in the Resource Conservation Alternative would be managed as described previously. All vegetation would be available for wildlife, watershed, wild horses, and forestry management. Some vegetation treatments, water facilities and gabions may be either constructed or maintained to sustain or enhance wildlife, watershed, and wild horse management. This alternative is necessary to provide baseline information to compare the environmental impacts of the other alternatives that involve grazing.

Ecological Representation Subalternative. The Ecological Representation Subalternative was developed to study the WSAs that are included in this RMP which contribute to expanding the diversity of the NWPS. In this subalternative, Cross Canyon, Dolores River Canyon, McKenna Peak, and Weber Mountain WSAs would be recommended suitable for wilderness designation (a total of 66,428 acres), using the Wilderness Manageability Alternative boundaries as described in the Wilderness Technical Supplement. Cahone Canyon, Menefee Mountain, Squaw/Papoose Canyon, and Tabeguache Creek WSAs would be recommended nonsuitable for wilderness designation (a total of 35,364 acres); the proposed management of these areas is described under the Preferred Alternative in the Supplement.

This subalternative is based primarily on the classification system used during the U.S. Forest Service's RARE II Study, which uses the ecoregion and physiographic regions of the United States (as developed by R. G. Bailey and A. W. Kuchler). For the purposes of this RMP, an ecoregion describes a continuous geographical area over which the environmental complex, produced by climate, topography, and soil, is sufficiently uniform to permit development of characteristic types of ecologic associations. Ecoregions are combined with potential natural vegetation types (PNVs; i.e., pinyon-juniper woodland) and physiographic landforms (i.e., canyons, mountains, etc.) which are used to relate and differentiate between a unique or fairly commonplace ecosystem studied for possible inclusion into the NWPS (see Wilderness Technical Supplement, Appendix 3-A, for detailed discussion).

In addition, the Ecological Representation Subalternative focuses on the supplemental values found within each of the WSAs. In some instances, it is the combination of a WSA's ecosystem and its unique supplemental values which would add significantly to diversity within the NWPS.

Resource Utilization Alternative

Theme

The Resource Utilization Alternative emphasizes development and use of minerals and economic values available on public land (see map at back of this RMP). Multiple uses would continue; however, resource values contributing to the local or regional economy would be favored. This alternative would favor mineral exploration and development, range utilization, and land disposal; projects relating to these uses would receive priority. The following discussion describes the overall management that would result from implementing this alternative.

Livestock Management. Revise existing and develop new AMPs on 109 allotments (850,000 acres; see Appendix 9-E). Less intensive management will occur on the remaining allotments. Range improvements (approx. $1.5 million for implementation over a ten-year period) should be developed, which include 80 miles of fence, 148 new water developments, and 52,800 acres of vegetation treatments (23,800 acres of this includes maintaining existing land treatment).

Available AUMs for livestock grazing would increase 29 percent from current active preference under this alternative. These target livestock use levels may be adjusted in the future to reflect new resource information gathered by monitoring or other studies. Consultation with livestock operators before final decisions are issued will determine whether individual adjustments need to be phased in over a five-year period or whether such adjustments can be fully implemented in the first year. All "I" and priority "M" category allotments will be given priority for investments in range improvements and monitoring.

Wildlife--Terrestrial. Manage the wildlife habitat to support increased populations of deer, elk, pronghorn antelope, and bighorn sheep (24,000 deer, 3,000 elk, 500 pronghorn antelope, and 500 bighorn sheep). Allow the reintroduction of bighorn sheep in the Dolores River Canyon WSA. Continue present management of Perins Peak and Paradox peregrine falcon eyries. Provide protective stipulations to bald eagle roosts and winter eagle concentration areas. Allow for reestablishing river otters in the upper Dolores River. Complete necessary improvements and HMPs for implementation (approx. cost, $1 million over a ten-year period).

Wildlife--Aquatic. Improve aquatic and riparian habitat on the following areas (in priority order):

- Upper San Miguel River and its tributaries (54 miles)
- Upper Dolores River (52 miles)
- Lower San Miguel River and its tributaries (67 miles)
- Animas River drainage (24 miles)
- Lower Dolores River and its tributaries (143 miles)
- Southwest quadrant streams (55 miles)

Develop needed HMPs (including monitoring plans) for implementation (approx. cost, $1.26 million over a ten-year period).

Recreation. Continue management of the Silverton SRMA. Management emphasis will be directed more toward developing recreation opportunities in the facility-dependent end of the ROS (see Appendix 3). Provide increased urban, rural, and roaded natural recreation opportunities and experiences. Continue ORV management as per existing mangement plan in American Flats/Silverton ORV plan (see Table 1-8). Develop and implement a Recreation Area Management Plan for the Silverton SRMA that outlines specific needs for visitor management facilities needed to encourage visitor use while not degrading the resources.

Manage the Dolores River as a SRMA as per classifications determined by BLM's ROS system. Manage the Dolores River (Bradfield Bridge to Dove Creek pump station) for its semiprimitive, nonmotorized recreation setting opportunities and from Dove Creek pump station to Disappointment Creek for its roaded, natural recreation opportunities. Also manage the river from Disappointment Creek to Gypsum Valley Bridge for its rural setting opportunities and from Gypsum Valley Bridge to Bedrock for its primitive opportunities. Develop a Recreation Area Management Plan for the river that outlines specific management goals, facilities, and objectives needed to encourage visitor use while not degrading the resource.

Wilderness. Under this alternative, none of the WSAs would be recommended as suitable for wilderness. Alternative land uses for the eight areas are summarized below:

WSA	Resource Emphasis
Cahone Canyon	Livestock, minerals (oil and gas), and cultural resources.
Cross Canyon	Livestock, minerals (oil and gas), cultural resources, and wildlife habitat.
Dolores River Canyon	Recreation and salinity control.
McKenna Peak	Livestock, wildlife, and soils and water.
Menefee Mountain	Minerals (coal, oil and gas), forestry, and wildlife.
Squaw/Papoose Canyon	Minerals (oil and gas, uranium and vanadium), cultural resources, and livestock.
Tabeguache Creek	Cultural resources and aquatic and riparian habitat.
Weber Mountain	Minerals (coal and oil and gas) and wildlife.

Minerals. Continue oil and gas leasing subject to standard or special stipulations. Standard stipulations will be provided on approximately 914,000 acres, seasonal wildlife stipulations on approximately 317,000 acres, no-surface occupancy stipulations on 55,000 acres, and no leasing on approximately 6,000 acres.

Continue cooperative management to protect surface resources on the DOE lease tracts. Continue to assist in the processing of mineral actions. Provide for necessary permits

for sand and gravel, including possibly 1,200 acres of Ewing Mesa. Provide special stipulations to protect the unique fossils in the Placerville area. Approximately 1,880 acres in the Nucla KRCRA (33.8 million tons), 1,240 acres in the East Cortez KRCRA (13.3 million tons), and 54,000 acres in the Durango KRCRA (1.8 billion tons) would be available for further consideration for coal leasing.

Cultural Resources. Manage the Anasazi Heritage Center as a cultural resource focal point for BLM in southwestern Colorado. Provide for cultural management of Lowry, Dominguez-Escalante, and Cannonball ruins; McLean Basin Towers; Sand, East Rock, Bull, Cross, Cahone, and Squaw/Papoose canyons; Painted Hand Ruin and Petroglyphs; Dolores Cave; Tabeguache Pueblo and Tabeguache Canyon; Indian Henry's Cabin; and Hamilton, Cow, and Mockingbird mesas. CRMPs should be developed to outline specific management objectives for each site or area. Provide protective oil and gas stipulations (no-surface occupancy) on Sand and East Rock canyons; Cannonball, Lowry, and Dominguez-Escalante Ruins; McLean Basin Towers; and Painted Hand Petroglyphs. Withdraw from mineral entry and provide for no-surface occupancy stipulations and no leasing for oil and gas on Painted Hand Ruin, Dolores Cave, Tabeguache Pueblo, Bull Canyon Rockshelter, and Indian Henry's Cabin.

Limit public access in Mockingbird Mesa, Bull Canyon, and Indian Henry's Cabin to foot or horse only and restrict vehicle access to authorized vehicles only. Close Cross, Cahone, Squaw/Papoose, and Tabeguache canyons to all ORV use. Acquire easement into Sand Canyon and administrative access into Cannonball Mesa and Yellowjacket Canyon.

Public Land Disposal. Dispose of approximately 33,000 acres (through sales, exchanges, or any other title transfer means) throughout the planning area as indicated on the Resource Utilization Alternative Map (see back of this RMP); this includes small, unmanageable, isolated parcels of land scattered throughout the area. In addition, public lands located in the Vigil-Abeyta and Archuleta mesa areas would also be disposed of.

Wild Horses. All wild horses in the planning area would be removed.

Forestry and Wood Products. Provide for intensive timber management on approximately 11,220 acres. Estimated allowable harvest would be 6.6 MMBF per decade. An additional 42,130 acres would be managed to provide woodland products (firewood, posts, poles, etc.). Estimated allowable harvest would be 6.4 MMBF (12,800 cords) per decade.

Soils and Water. Provide protective management on 4,700 acres in Boulder Gulch watershed to protect water quality for Silverton. Protect water quality in aquifers used for domestic and municipal purposes in the Dry Creek Basin and Tabeguache Creek watersheds.

Manage 50,000 acres in Disappointment Valley and Dry Creek Basin to reduce erosion and sediment. Manage 50,000 acres in Disappointment Valley and Yellowjacket Canyon to reduce salinity in the Colorado River. Reclaim five pollution sources (of heavy metals) in the Upper Animas River drainage.

Current Management (No Action) Alternative

Theme

The Current Management Alternative reflects our current management direction, policies, and existing land use plan decisions (see map at back of this RMP). It was assumed that no major policy changes would occur and that the same funding level and apportionment of funds for resource programs would continue. The following discussion describes the overall management that would result from implementing this alternative.

Livestock Management. Continue current management of the 11 AMPs (304,000 acres; see Appendix 9-E). Less intensive management will occur on remaining allotments. Range improvements including 7,900 acres of existing vegetation treatments will be maintained (approx. $200,000 over a ten-year period). The Current Management Alternative is the proposed action for livestock grazing, because the Preferred Alternative cannot be implemented pending monitoring (W.O. Memorandum 82-650).

Wildlife (Aquatic and Terrestrial). Continue current management to maintain habitat to support 20,000 deer, 1,600 elk, and 175 pronghorn antelope that graze on public lands. Continue management of Perins Peak and Paradox peregrine falcon eyries. Provide protective stipulations to bald eagle roosts and winter eagle concentration areas. Maintain aquatic and riparian habitat. Complete HMPs and improvements necessary for implementation (approx. cost, $191,000 over a ten-year period). Continue management of the McElmo Rare Snake and Lizard Research Natural Area.

Recreation. Continue management of the Silverton SRMA. Maintain limited monitoring and use supervision. Provide public information and assistance concerning the area. Continue ORV (see Table 1-8) and VRM management as per existing MFP direction. Manage the Dolores River Canyon for its wild and scenic qualities as per existing MFP direction. Continue to manage Weber and Menefee mountains for their primitive values noted in the existing MFP.

Wilderness. No designated BLM wilderness areas currently exist in the planning area. Alternative land uses for the eight areas are contained within the other emphasis areas; see Wilderness Technical Supplement for detailed description.

Minerals. Continue oil and gas leasing subject to standard or special stipulations contained in existing oil and gas umbrellas. Standard stipulations will be provided on approximately 841,000 acres; seasonal wildlife stipulations on approximately 303,000 acres; no-surface occupancy stipulations on approximately 39,000 acres; and no leasing on approximately 6,000 acres. Additionally, approximately 103,000 acres is protected by a wilderness interim management stipulation.

Continue cooperative management to protect surface resources on the DOE uranium lease tracts. Provide necessary permits for sand and gravel. Continue existing coal leases (National King Coal, 340 acres [8.6 million tons]; Perma Resources, 90 acres [5.7 million tons]). Emergency leases or lease modifications may be required at a future date.

Cultural Resources. Manage the Anasazi Heritage Center as a cultural resource focal point for BLM in southwestern Colorado. Continue cultural management of Lowry, Escalante, Dominguez, and Cannonball ruins; McLean Basin Towers; and Sand Canyon. Continue present

protective withdrawals and no-surface occupancy oil and gas stipulations for Sand and East Rock canyons; Cannonball, Lowry, Dominguez-Escalante ruins; McLean Basin Towers; and Painted Hand Petroglyphs.

Public Land Disposal. As per existing MFPs, consolidate public land ownership, by sale, exchange, or boundary adjustment of approximately 16,000 acres, throughout the planning area as indicated in the Current Management Alternative Map (see back of this RMP); this includes small, unmanageable, isolated parcels of land with limited public values scattered throughout the area.

Wild Horses. Continue monitoring approximately 100 horses in the Spring Creek Basin and approximately 21 horses in the Naturita Ridge area (see Appendix 5, Emphasis Areas, for more detail).

Forestry and Wood Products. Continue intensive timber management on approximately 9,540 acres of forest lands. The estimated allowable harvest would be 5.6 MMBF per decade. Continue to provide woodland products (firewood, posts, poles, etc.).

Soils and Water. Protect 4,700 acres in Boulder Gulch watershed to ensure water quality for Silverton. Protect water quality in aquifers used for domestic and municipal purposes in the Dry Creek Basin and Tabeguache Creek watersheds.

Special Management Areas. Continue management on the McElmo Rare Snake and Lizard Research Natural Area and maintain present mineral withdrawal.

JUNIPER HOUSE (WITHIN SAND CANYON CULTURAL EMPHASIS AREA) IS A CLIFF DWELLING OF APPROXIMATELY 12 ROOMS, INCLUDING A SMALL ALCOVE ROOM.

Preferred Alternative

Theme

The Preferred Alternative balances competing demands by providing needed goods and services, while protecting important and sensitive environmental values (see map at back of this RMP). The goal of this alternative is to change present management to the extent necessary to meet statutory requirements and policy commitments and to resolve identified issues in a balanced, cost-effective manner. The following discussion describes the overall management that would result from implementing this alternative.

Livestock Management. Revise existing and develop new AMPs on 71 priority allotments (810,000 acres; see Appendix 9-E). Less intensive management will occur on remaining allotments. Range improvements (approx. $1.0 million for implementation over a ten-year period) should be developed that include 77 miles of fence, 146 new water developments, 40,100 acres of vegetation treatment (18,000 acres of which includes maintaining existing land treatments).

Available forage (AUMs) for livestock grazing would increase 13 percent from current active preference under this alternative. These target livestock use levels may be adjusted in the future to reflect new resource information gathered by monitoring or through using other studies.

Consulting with livestock operators before final decisions are issued will determine whether individual adjustments need to be phased in over a five-year period or whether such adjustments can be fully implemented in the first year. All "I" category allotments will be given a priority for future investments in range improvements and monitoring. Allotments with the greatest potential for improving wildlife, watershed, and vegetation conditions and livestock forage production will be implemented first.

Wildlife--Terrestrial. Manage the habitat for current levels of deer and elk (20,000 deer and 1,600 elk). Provide for 300 head of pronghorn antelope and allow for reintroducing 300 bighorn sheep in the Dolores River Canyon WSA. Continue present management of Perins Peak and Paradox peregrine falcon eyries. Provide protective oil and gas leasing stipulations for bald eagle roosts and winter eagle concentration areas. Reintroduce river otters in the upper Dolores River. Complete necessary improvements and HMPs necessary for implementation (approx. cost, $500,000 over a ten-year period). The following riparian areas should be managed to improve aquatic and(or) riparian habitat; Roc, North and South mesas; La Sal and Dry creeks; the East and West forks of Dry Creek Canyon; and Cross, Cow, Cahone, Hovenweep, and Bridge canyons.

Wildlife--Aquatic. Improve aquatic and riparian habitat on these areas listed in priority order: the upper San Miguel River and its tributaries (44 miles), the upper Dolores River and its tributaries (30 miles), and the lower San Miguel River and its tributaries (20 miles). Develop needed HMPs and improvements for implementation (including monitoring plans; approx. cost, $233,000 over a ten-year period).

Recreation. Continue intensive recreation management of the Silverton SRMA. Provide for a blend of settings and opportunities that tend toward the resource-dependent end of the BLM's ROS system. Allow local communities to provide for facility-dependent settings and opportunities. Provide increased semiprimitive, motorized opportunities with some

primitive, semiprimitive, nonmotorized, and roaded natural settings and management objectives. Continue ORV management in the Silverton SRMA as per existing plan (see Table 1-8). Develop and implement a Recreation Area Management Plan for the Silverton SRMA that outlines specific needs for visitor management facilities.

Manage the Dolores River Canyon as a SRMA as per classifications determined by BLM's ROS system. Manage the Dolores River from the Bradfield Bridge to Dove Creek pump station for its semiprimitive nonmotorized recreation setting opportunities and from Dove Creek pump station to Disappointment Creek for its semiprimitive motorized setting opportunities. Also manage the river from Disappointment Creek to Gypsum Valley Bridge for its rural setting opportunities and from Gypsum Valley Bridge to Bedrock for its primitive ROS values and settings. Determine carrying capacities for the river corridor consistent with specific ROS setting classifications. Develop a Recreation Area Management Plan for the river that outlines specific management goals, objectives, and facilities needed.

Manage Weber and Menefee mountains for their semiprimitive recreation values. Both areas should be closed to ORVs and managed under VRM Class II standards. The McElmo Research Natural Area (RNA; see Glossary) will be managed for research values but the mineral withdrawal will be removed. No-surface occupancy stipulations for oil and gas leasing will be continued.

Wilderness. Recommend as suitable for wilderness the lands listed under the Wilderness Manageability Alternative for the Dolores River Canyon WSA (28,366 acres). Develop a wilderness management plan for the river and for recreation use following the area's designation by Congress.

All other areas in the planning area would be recommended as nonsuitable for wilderness management. The alternative land uses for the other seven areas are contained within the other emphasis areas.

WSA	Resource Emphasis
Cahone Canyon	Cultural resources, ACEC, aquatic and riparian habitat and minerals.
Cross Canyon	Cultural resources, ACEC, aquatic and riparian habitat and minerals.
McKenna Peak	Livestock grazing, wild horses, wildlife, soils and water.
Menefee Mountain	Recreation and wildlife.
Squaw/Papoose Canyon	Cultural resources, ACEC, and minerals.
Tabeguache Creek	Cultural resources, aquatic and riparian habitat, Outstanding Natural Area.
Weber Mountain	Recreation and wildlife habitat.

Minerals. Continue oil and gas leasing subject to standard or special stipulations. Standard stipulations will be provided on approximately 879,000 acres; seasonal wildlife stipulations on approximately 317,000 acres; no-surface occupancy stipulations on approximately 39,000 acres; and no leasing on approximately 57,000 acres.

Continue cooperative management to protect surface resources on the DOE uranium lease tracts. Provide for necessary permits for sand and gravel, including possibly 400 acres on Ewing Mesa. Provide protective stipulations to protect the unique fossils in the Placerville area. Approximately 1,480 acres in the Nucla KRCRA (26.6 million tons) and 46,000 acres in the Durango KRCRA (1.5 billion tons) would be available for further consideration for coal leasing. The East Cortez KRCRA would not be available for possible future coal leasing; it will be managed under a wildlife emphasis.

Cultural Resources. Manage the Anasazi Heritage Center as a cultural resource focal point for BLM in southwestern Colorado. Provide for cultural management of Lowry, Dominguez-Escalante, and Cannonball ruins; McLean Basin Towers; Squaw/Papoose, Bull, Sand, Cahone, Cross, and East Rock canyons; Painted Hand Ruin and Petroglyphs; Dolores Cave; Tabeguache Pueblo and Tabeguache Canyon; Indian Henry's Cabin; and Hamilton, Cow, and Mockingbird mesas. CRMPs should be developed to outline specific management objectives for each site or area.

Provide protective oil and gas stipulations, no-surface occupancy, and no leasing on Sand, Cahone, Cross, Squaw/Papoose, Tabeguache, and East Rock canyons; Cannonball, Lowry, and Dominguez-Escalante ruins, McLean Basin Towers and Painted Hand Petroglyphs. Withdrawal from mineral entry and provide for no-surface occupancy for oil and gas leasing on Painted Hand Ruin, Dolores Cave, Tabeguache Pueblo, Bull Canyon Rocksheiter, and Indian Henry's Cabin.

Limit public access in Mockingbird Mesa, Bull Canyon, and Indian Henry's Cabin to foot or horse only and restrict vehicle access to authorized vehicles only. Close Cross, Cahone, Squaw/Papoose and Tabeguache canyons to all ORV use. Acquire easement into Sand Canyon and administrative access into Cannonball Mesa and Yellowjacket Canyon.

Manage Tabeguache Creek as an Outstanding Natural Area (see Glossary). Request a mineral withdrawal on approximately 560 acres along the drainage to protect the cultural values.

Public Land Disposal. Through sales, exchanges, or any other title transfer means, dispose of approximately 21,800 acres throughout the planning area, as indicated on the Preferred Alternative Map (see back of this RMP); this includes small, unmanageable, isolated parcels of land with limited public value scattered throughout the area and Archuleta Mesa.

Wild Horses. Manage 50 wild horses in the Spring Creek Basin area and designate it as a horse range. Develop a herd management plan and implement necessary range improvements. Remove all the wild horses from the Naturita Ridge herd.

Forestry and Wood Products. Provide intensive timber management on approximately 10,960 acres. Estimated allowable harvest would be 6.5 MMBF per decade. An additional 42,130 acres would be managed to provide woodland products (firewood, posts, poles, etc.). Estimated allowable harvest would be 6.4 MMBF (12,800 cords) per decade.

Soils and Water. Provide protective management on 4,700 acres in the Boulder Gulch watershed to protect water quality for Silverton. Protect water quality in aquifers used for domestic and municipal purposes in the Dry Creek Basin and Tabeguache Creek watersheds.

Manage 65,000 acres in the following watersheds to reduce erosion and sediment yield: Disappointment, Big Gypsum, and Paradox valleys and Dry Creek Basin. Manage 46,000 acres in Disappointment Valley to reduce salinity and erosion in the Colorado River.

Develop watershed management plans for all erosion and salinity areas detailing specific management goals and actions. Reclaim five pollution sources (for heavy metals) in the Upper Animas River drainage.

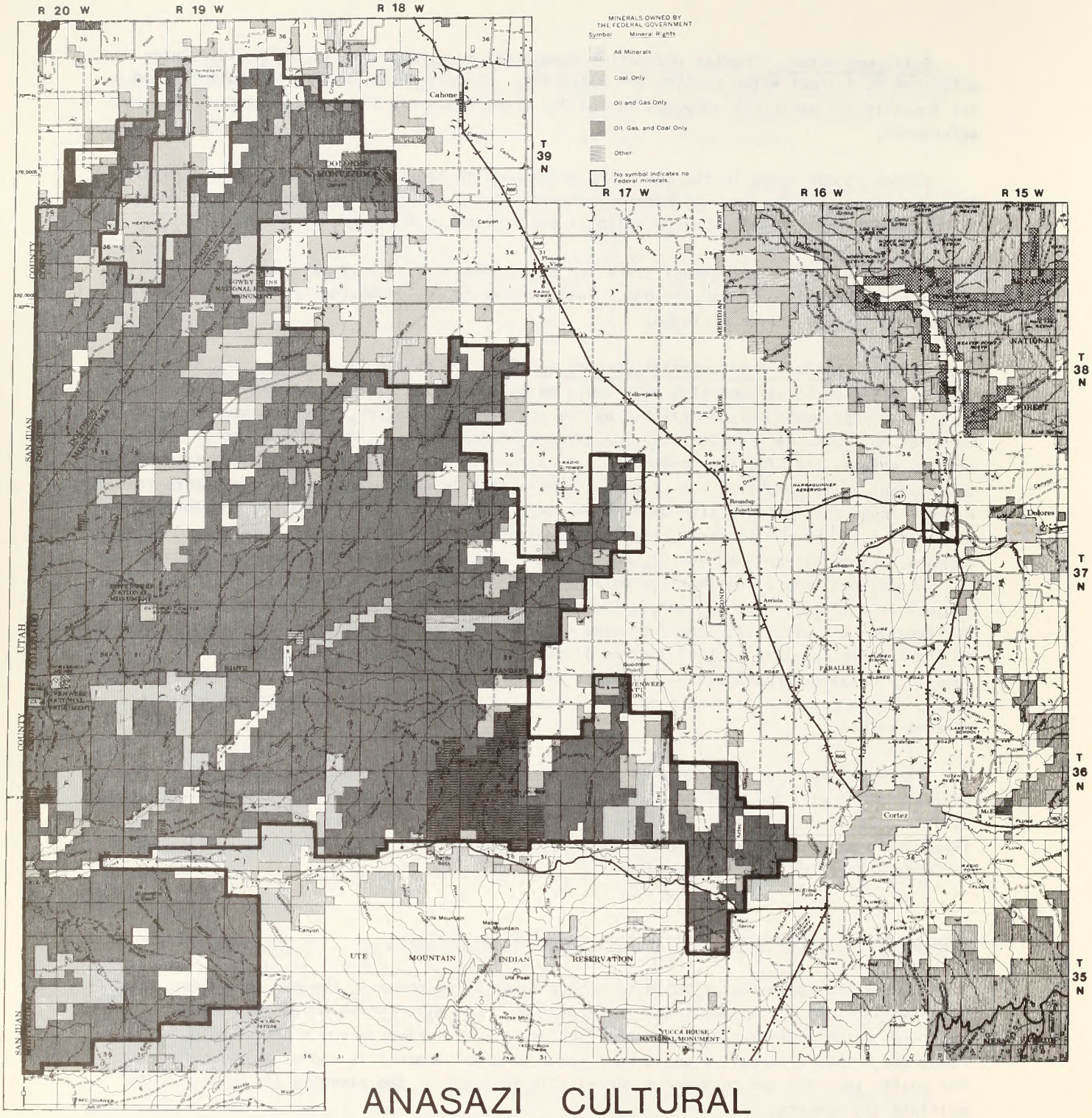
Area of Critical Environmental Concern (ACEC). The public land west of Cortez (approx. 156,000 acres; see Fig. 1-1) would be designated as an ACEC. Private lands within the ACEC would not be affected by the proposed designation. The proposed Anasazi Cultural Multiple Use Area contains important cultural, mineral, recreation, range, back-country values, and wildlife resources. It represents the focus of the northern Anasazi development, with more than 100 sites per square mile in many areas, which represents the highest known archaeologic site density per acre of any area in the nation. The total number of sites on public lands here is estimated at nearly 20,000, many covering 10 acres or more. Large oil and gas and CO_2 reserves are also contained within the area. Shell Oil Company has made a multimillion dollar investment in these CO_2 resources, with a project life of more than 30 years. The public land within the ACEC provides forage used by livestock and wildlife. The increased mineral development presents a challenge to BLM to provide high quality habitat for the livestock and wildlife dependent upon public lands. Population growth places increased pressure for recreation pursuits on the public lands. These opportunities need to be provided, while emphasizing the cultural and mineral values.

The management of the ACEC will be intensified under this proposal. Detailed activity plans will be developed, closer monitoring of the surface-disturbing activities will be undertaken, and additional manpower and money will be requested to more intensively manage this significant resource. (See the ACEC description, L, in Appendix 5 for more details on proposed management.)

Alternatives Considered but Eliminated from Detailed Analysis

During the beginning of the alternative formulation process, the RMP core team discussed the use of two additional alternatives. One alternative could have been developed which maximized resource utilization of both renewable and nonrenewable resources. This alternative would have required great trade-offs among the many users of the public land and was considered unrealistic in light of the planning issues and BLM's multiple use mandate.

An additional alternative was also discussed that would have greatly constrained the present users of the public land and which would have allowed the natural ecologic processes to continue throughout the planning area with only minimal impacts caused by humans and would have involved greatly reduced mineral leasing, livestock grazing, and wildlife and cultural resource management. Again it was considered unrealistic in light of the planning issues and BLM's multiple use mandate.



ANASAZI CULTURAL MULTIPLE USE AREA

Area of Critical Environmental Concern

Public Lands

1 0 1 2 3 MILES

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Figure 1-1. Commonly called the Sacred Mountain area, this proposed ACEC contains approximately 156,000 acres of BLM land west of Cortez.

Table 1-11. Comparative Analysis of Impacts for the RMP Alternatives.

Resources/ activities	Alternatives: Resource conservation	Alternatives: Resource utilization	Alternatives: Current management (no action)	Alternatives: Preferred	Subalternatives to Conservation Alternative: No grazing	Subalternatives to Conservation Alternative: Ecological representation
Energy and Minerals	Oil & Gas	Oil & Gas	Oil & Gas	Oil & Gas	Oil & Gas	Oil & Gas
	No leasing of 108,441 ac (8% of planning area).	No leasing of 5,840 ac (<1% of planning area).	No leasing of 5,840 ac (<1% of planning area).	No leasing of 56,931 ac (<4% of planning area).	No changes would occur under this alternative.	No leasing of 76,628 ac (6% of planning area).
	No-surface occupancy stipulations for 25,990 ac (2% of planning area).	No-surface occupancy stipulations for 54,620 ac (4% of planning area).	No-surface occupancy stipulations for 39,040 ac (3% of planning area).	No-surface occupancy stipulations for 39,154 ac (3% of planning area).		No-surface occupancy stipulations for 34,485 ac (3% of planning area).
	Seasonal wildlife restrictions for 316,690 ac (25% of planning area).	Seasonal wildlife restrictions for 316,690 ac (25% of planning area).	Seasonal wildlife restrictions for 302,730 ac (23% of planning area).	Seasonal wildlife restrictions for 316,690 ac (25% of planning area).		Same as Resource Conservation Alternative.
	Standard stipulations for 839,879 ac (65% of planning area).	Standard stipulations for 913,850 ac (70% of planning area).	Standard stipulations for 943,390 ac (73% of planning area).	Standard stipulations for 878,225 ac (68% of planning area).		Standard stipulations for 863,197 ac (67% of planning area).
	Locatable Minerals	Locatable Minerals	Locatable Minerals	Locatable Minerals	Locatable Minerals	Locatable Minerals
	129,000 ac (13% of planning area) withdrawn from mineral entry.	4,000 ac (<1% of planning area) withdrawn from mineral entry.	4,400 ac (<1% of planning area) withdrawn from mineral entry.	34,000 ac (3% of planning area) withdrawn from mineral entry.	No changes would occur.	70,188 ac (7% of planning area) withdrawn from mineral entry.

Table 1-11. (continued)

Resources/ activities	Alternatives: Resource conservation	Alternatives: Resource utilization	Alternatives: Current management (no action)	Alternatives: Preferred	Subalternatives to Conservation Alternative: No grazing	Subalternatives to Conservation Alternative: Ecological representation
Energy and Minerals (continued)	Coal	Coal	Coal	Coal	Coal	Coal
	34,000 acres (943 million tons) in the Durango KRCRA would be available for coal leasing. All of the East Cortez & Nucia KRCRAs would not be available for coal leasing. Wilderness designation of all WSAs will preclude developing coal, oil & gas, CO_2, & uranium reserves on 102,601 acres.	The following acres would be available for coal leasing; the Durango KRCRA, 54,000 (1.8 billion tons), the East Cortez KRCRA, 1,880 (13.3 million tons), & the Nucia KRCRA, 1,880 (33.8 million tons).	Two existing leases of 430 ac (14.3 million tons).	The following acres would be available for coal leasing; the Durango KRCRA (46,000 acres) or 1.5 billion tons, & the Nucia KRCRA (1,480 ac) or 26.6 million tons, and the East Cortez KRCRA would not be available for coal leasing. Wilderness designation of the Dolores River Canyon WSA could result in significant losses of oil, gas & CO_2 reserves.	No changes would occur.	Same as Resource Conservation Alternative. Wilderness designation of the four WSAs could result in significant losses of oil, gas & CO_2 reserves.
	Significant, long-term adverse impacts could result from no leasing & no-surface occupancy stipulations for oil & gas leasing &	Significant, long-term adverse impacts could result from no leasing & no-surface occupancy stipulations for	No significant impacts could occur.	Significant, long-term adverse impacts could result from no leasing & no-surface occupancy stipulations for	No changes would occur.	Significant, long-term adverse impacts could result from no leasing & no-surface occupancy

Table 1-11. (continued)

Resources/ activities	Alternatives				Subalternatives to Conservation Alternative	
	Resource conservation	Resource utilization	Current management (no action)	Preferred	No grazing	Ecological representation
Energy and Minerals (continued)	withdrawals from mineral entry.	oil & gas leasing & withdrawals from mineral entry.		oil & gas leasing & withdrawals from mineral entry.		stipulations for oil & gas leasing & withdrawals from mineral entry.
Vegetation	Long-term, beneficial changes in vegetation condition could improve watersheds, wildlife habitat, & livestock production.	Long-term, positive impacts could be similar to those listed under the Resource Conservation Alternative except to a greater extent.	Site-specific, adverse impacts could continue with detrimental effects to vegetation.	Long-term, positive impacts would be similar to those listed under Resource Conservation Alternative.	Long-term, positive impacts could occur due to removing livestock.	Impacts would be similar to the Resource Conservation Alternative except fewer areas would be preserved due to designating the four WSAs as wilderness.
Soils and Water	Long-term, significant decreases in erosion, sediment, & salinity yields would occur. Municipal & domestic water sources would be protected. Potential losses of opportunities for salinity control work in portions of McKenna Peak WSA could occur.	Long-term decreases in erosion, sediment, & salinity yields could occur. Municipal & domestic water sources would be protected.	Continued high erosion & sediment yields could occur. Salt loading in the Colorado River would remain unchanged. Municipal & domestic water sources would be protected.	Impacts would be similar to those listed under Resource Utilization Alternative.	Long-term, beneficial impacts could occur due to lack of surface disturbance & vegetation protection.	Impacts would be similar to those listed under Resource Conservation Alternative, except 36% less area would be protected.

Table 1-11. (continued)

Resources/ activities	Alternatives				Subalternatives to Conservation Alternative	
	Resource conservation	Resource utilization	Current management (no action)	Preferred	No grazing	Ecological representation
Terrestrial Wildlife	Long-term improvements in habitat conditions could occur. Land disposal could cause adverse impacts to winter range & riparian values. T&E species could benefit from increased protection. Big game herds would remain static.	Habitat conditions could improve in long term. Increased land disposal could cause adverse impacts due to habitat loss. T&E species could be enhanced & big game herds could increase.	Habitat conditions would remain static or would decline in long term. Big game populations would decline in long term.	Impacts would be similar to those listed under the Resource Conservation Alternative. ACEC designation could have long-term, positive impacts on wildlife through more intensive management.	Long-term, potential decline in habitat condition could occur, but overall impacts would be positive to wildlife habitat.	Impacts would be similar to those those listed under Resource Conservation Alternative except 36% less area of wilderness would be designated & fewer areas of wildlife habitat would be protected.
	Manage habitat for: 20,000 deer, 1,600 elk, 300 pronghorn, & 300 bighorn sheep.	Manage habitat for: 24,000 deer, 3,000 elk, 500 pronghorn, & 500 bighorn sheep.	Manage habitat for current population levels of: 20,000 deer, 1,600 elk & 175 pronghorn antelope.	Manage habitat for: 20,000 deer, 1,600 elk, 300 pronghorn, & 300 bighorn sheep.		
Aquatic Wildlife	Long-term, beneficial impacts could occur on 250 miles of aquatic & riparian habitat.	Long-term, beneficial impacts could occur on 400 miles of aquatic & riparian habitat. Improved fishery resources could occur.	Some habitat could continue to decline; others could remain static or improve.	Long-term, beneficial impacts could occur on 94 miles of aquatic & riparian habitat. Intensive livestock & wildlife management would occur on an additional 306 miles of habitat.	Long-term beneficial impacts could occur.	Impacts would be similar to those listed under Resource Conservation Alternative but 36% less area would be protected.

Table 1-11. (continued)

Resources/ activities	Alternatives				Subalternatives to Conservation Alternative	
	Resource conservation	Resource utilization	Current management (no action)	Preferred	No grazing	Ecological representation
Livestock Grazing	Significant, long-term adverse impacts to livestock operators could occur due to lowered livestock production. Livestock use could decrease 33% from current active preference.	Significant, beneficial long-term impacts to livestock operators could occur due to increases in livestock production. Livestock use could increase 29% from current active preference.	No change under this alternative would occur to livestock use levels.	Similar to impacts listed under Resource Utilization Alternative. Livestock use could increase 13% from current active preference. ACEC designation could have long-term positive impacts to livestock management in the Sacred Mountain area through more intensive management.	Livestock use consisting of 64,232 AUMs could be lost in short & long term, causing significant, adverse impacts to livestock operators.	No significant impacts would occur.
Wild Horses	Wild horse populations could be managed at healthy, viable levels in Spring Creek (75 head) & Naturita Ridge (50 head) herd areas.	Negative impacts to public viewing could occur due to removing horses. Positive, long-term impacts could occur to vegetation, livestock, & wildlife resources.	Populations could continue to increase with locally significant, adverse impacts to vegetation, livestock grazing, & big game habitat. Horse populations (approx. 100 head in Spring Creek Basin, 24 in	Impacts could be similar to those listed under Resource Conservation Alternative for Spring Creek herd (however, a 50-head horse herd would be intensively managed). Impacts would be similar to those listed under	Wild horses could increase in long term in both areas.	Impacts would be similar to those listed under Resource Conservation Alternative.

Table 1-11. (continued)

Resources/ activities	Alternatives				Subalternatives to Conservation Alternative	
	Resource conservation	Resource utilization	Current management (no action)	Preferred	No grazing	Ecological representation
Wild Horses (continued)			Naturita Ridge) could decline in their viability in long term.	Resource Utilization Alternative for Naturita Ridge herd.		
Forestry	Insignificant production losses could occur. Improved management could increase wood fiber production over the long term. Estimated allowable timber harvest would be 4.7 MMBF/decade, & woodland harvest, 5.3 MMBF/decade.	Insignificant production increases would occur. Impacts acts would be similar to Resource Conservation Alternative. Estimated allowable timber harvest would be 6.6 MMBF/decade & woodland harvest, 6.4 MMBF/decade.	insignificant production increases would occur. Impacts would be similar to Resource Conservation Alternative; however, estimated allowable timber harvest would be 5.6 MMBF/decade. No woodland acres are intensively managed.	insignificant production increases would occur. Impacts would be similar to Resource Conservation Alternative. Estimated allowable timber harvest would be 6.5 MMBF/decade & woodland harvest 6.4 MMBF/decade.	Woodland (24,000 acres) could be made available for intensive management.	impacts would be similar to Resource Conservation Alternative.
Recreation	Long-term, beneficial impacts could occur. Wilderness designation could have both positive & negative, long-term impacts to recreation opportunities & settings.	Long-term, beneficial impacts could occur. Recreation settings & opportunities would be provided. Need for atypical ecotypes & recreation settings would continue with no WSAs designated as wilderness.	Impacts could be similar to those listed under Resource Utilization Alternative.	Impacts would be similar to those listed under Resource Conservation Alternative. Dolores River Canyon WSA would be designated as wilderness, ACEC designation could have positive,	Big game hunting opportunities could increase initially & then gradually decline.	impacts would be similar to those listed under Resource Conservation Alternative, but fewer acres would be designated as wilderness.

Table 1-11. (continued)

Resources/ activities	Alternatives				Subalternatives to Conservation Alternative	
	Resource conservation	Resource utilization	Current management (no action)	Preferred	No grazing	Ecological representation
Recreation (continued)	Management of Dolores & Silverton SRMAs would be intensified.	Management of Dolores & Silverton SRMAs would be intensified.		long-term impacts on recreation settings & opportunities through more intensive management. Manage McElmo Research Natural Area but remove mineral withdrawal.		
Cultural Resources	Overall long-term, beneficial impacts could occur. Potentially adverse impacts because of increased visitor use could occur that would be associated with wilderness designation.	Overall long-term, beneficial impacts would occur; however, site-specific, adverse impacts could occur due to increased mineral development on Cross, Cahone, & Squaw/Papoose canyons.	Impacts would be similar to those listed under Resource Utilization Alternative. Low levels of cultural resource management will continue to adversely affect these resources.	Effects would be similar to those listed under Resource Conservation Alternative, but ACEC designation would have long-term, positive impacts on cultural resources through more intensive management. Manage Tabeguache Creek area as an Outstanding Natural Area.	Long-term beneficial impacts could occur because of eliminating livestock trampling on cultural resource sites.	Impacts would be similar to those listed under Resource Conservation Alternative, except that four WSAs would be designated instead of eight.

Table 1-11. (continued)

Resources/ activities	Alternatives				Subalternatives to Conservation Alternative	
	Resource conservation	Resource utilization	Current management (no action)	Preferred	No grazing	Ecological representation
Visual Resources	Approx. 50% of important landscapes within planning area would be protected.	Approx. 45% of important landscapes within planning area would be protected.	No VRM classes have been established.	Approx. 70% of important landscapes within planning area would be protected.	No significant impacts would occur.	Effects would be similar to those listed under Resource Conservation Alternative, but fewer acres would be affected.
Wilderness Resources*	Long-term, positive impacts to wilderness values would occur. Natural values would be enhanced. Diversity in NWPS would be enhanced as would supplemental values. All eight WSAs (102,601 ac) would be recommended for wilderness.	Potential permanent losses of wilderness characteristics & values could occur.	Potential permanent losses of wilderness characteristics & values could occur. Prior MFPs did not consider wilderness.	Dolores River Canyon WSA (28,366 ac) would be recommended for wilderness. Impacts would be similar to those listed under Resource Conservation Alternative for Dolores River Canyon WSA & same as Resource Utilization Alternative for other seven WSAs.	Long-term, beneficial impacts could occur due to protecting vegetation.	Impacts would be similar to those listed under Resource Conservation Alternative for Cross and Dolores River Canyons, McKenna Peak, and Weber Mountain WSAs. Approx. 65,788 acres would be recommended for wilderness. Impacts would be similar to those listed under the Preferred Alternative for Cahone & Squaw/Papoose

* This does not include all alternatives discussed in the Wilderness Technical Supplement.

Table 1-11. (continued)

Resources/ activities	Alternatives				Subalternatives to Conservation Alternative	
	Resource conservation	Resource utilization	Current management (no action)	Preferred	No grazing	Ecological representation
Wilderness Resources (continued)						canyons, Tabeguache Creek, & Menefee Mountain WSAs.
Lands	Lands disposal (approx. 1.8% of planning area) will be long-term, beneficial use through improving efficiency of management. Some impacts would occur to ROWs and private lands due to wilderness designation.	3.3% of planning area would be disposed of, improving efficiency of management. No wilderness would be designated.	Impacts would be similar to those listed under Resource Utilization Alternative except 1.6% of planning area would be disposed.	Impacts would be similar to those listed under Resource Conservation Alternative except there would be fewer impacts from wilderness designation on ROWs and private land. 2.2% of planning area would be disposed of.	No impacts would occur under this alternative.	Impacts would be similar to Resource Conservation Alternative, except only four areas would be designated wilderness.
Fire Management	Under this alternative, improved management of fire in ecological setting would occur.	Impacts would be similar to those listed under Resource Conservation Alternative.	No significant impacts would occur under this alternative.	Impacts would be similar to those listed under Resource Conservation Alternative.	No important impacts would occur under this alternative.	No change would occur under this alternative.

Table 1-11. (continued)

Resources/ activities	Alternatives				Subalternatives to Conservation Alternative	
	Resource conservation	Resource utilization	Current management (no action)	Preferred	No grazing	Ecological representation
ORV Use	Public lands would be designated: 80% open, 6% limited, & 14% closed to ORVs.	Public lands would be designated: 82% open, 10% limited, & 8% closed to ORVs.	Public lands are currently: 95% open, 5% limited, & less than 1% closed to ORVs.	Public lands would be designated: 79% open, 11% limited, & 10% closed to ORVs.		
Economics	Increased revenues for recreation & tourism would occur, but no significant impacts overall.	Increased revenues are projected, but no significant impacts would occur.	No significant impacts currently occurring.	Impacts would be similar to those listed under Resource Conservation Alternative.	Individual ranchers could be significantly affected, but significant impact would occur overall.	Impacts would be similar to those under the Resource Conservation Alternative.

Source: BLM Data 1984.

CHAPTER TWO -

AFFECTED ENVIRONMENT

CHAPTER TWO
AFFECTED ENVIRONMENT

Chapter Two summarizes various physical, biologic, and socioeconomic characteristics of the planning area that affect or are affected by the RMP. Much of the information contained is summarized from the Management Situation Analysis (MSA), which is available for review at the Durango San Juan Resource Area Office. The MSA includes more detailed material not duplicated in this RMP/EIS, including a description of current management (summarized in Chapter 1, Alternatives).

Climate

The San Juan/San Miguel planning area (see Fig. 2-1) is located in a high plateau and mountainous, continental climate regime characterized by dry air, sunny days, clear nights, low to moderate precipitation and evaporation, and extreme daily temperature changes (see Table 2-1). The Continental Divide borders the eastern portion of the study area, and the very high, rugged terrain of the San Juan Mountains is to the east and north. The western and southwestern portion is characterized by high mesas and deserts. The region's complex topography causes considerable variation in site-specific temperature, precipitation, and surface winds. Extremely frigid conditions and blizzards can occur, but severe weather conditions such as tornadoes, floods, and damaging hail are rare.

The climatology of the planning area is very diverse; the following description describes a range of climatic conditions throughout the planning area. Temperatures vary mostly with elevation, and to a lesser extent, with local microclimate. At higher elevations, summer temperatures will probably range from lows of 3°C to highs of 23°C. Winter temperatures may range from -17°C to 2°C. Extreme temperatures may fall as low as -43°C or as much as 32°C. Freezing temperatures and snowfall are possible year-round, with snow accumulation likely from September through May. At lower elevations, summer temperatures will range from 10°C to 34°C. Winter temperatures can range from -10°C to 6°C. Extreme temperatures may fall as low as -32°C. Freezing temperatures are likely from September through May, with snow accumulation from October through April.

Annual precipitation is highly variable, ranging from 30 centimeters (cm) to 100 cm, with a small summer maximum due to thunderstorms. At the highest elevations, most precipitation comes from winter snowstorms. Snowfall amounts vary from approximately 60 cm at the lower elevations to more than 930 cm at Wolf Creek Pass; mountainous accumulation may vary from 75 cm to 225 cm.

Although upper level winds may predominate from the west and southwest, the diverse and rugged terrain of the planning area results in complex windflows and surface winds. Synoptic (pressure gradient) winds are forced around hills or channeled through valleys, but without strong gradient flows, daily upslope and downslope winds predominate. Upslope winds usually occur on sunny mornings when the air at higher elevations heats rapidly and rises. Downslope winds occur when the air near the ground cools, becomes dense and sinks downward along drainages. The planning area is located in the southwest air basin of Colorado, which is defined based on drainage winds, indicating areas of similar atmospheric flow, topographic influence and general dispersion potential.

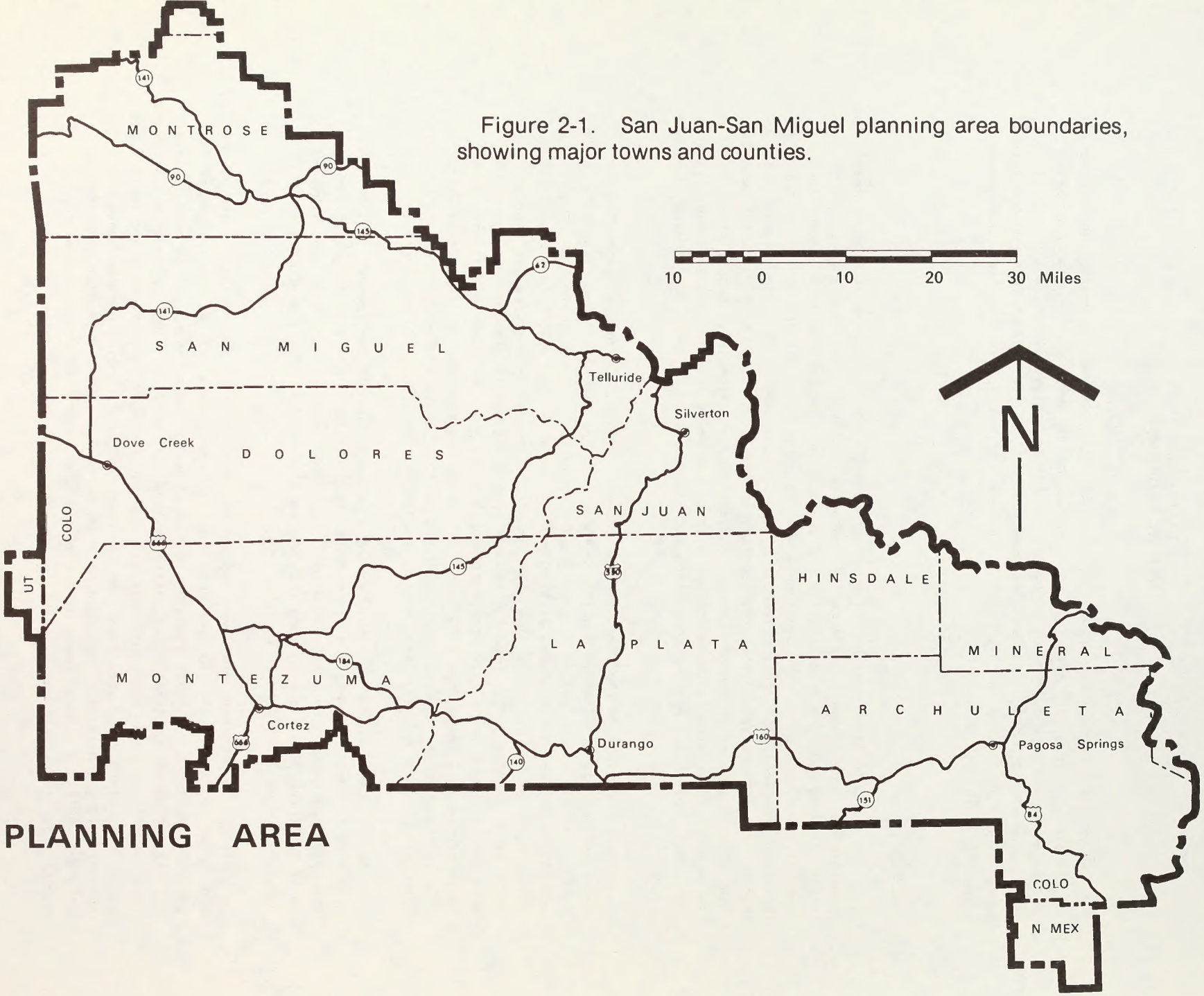
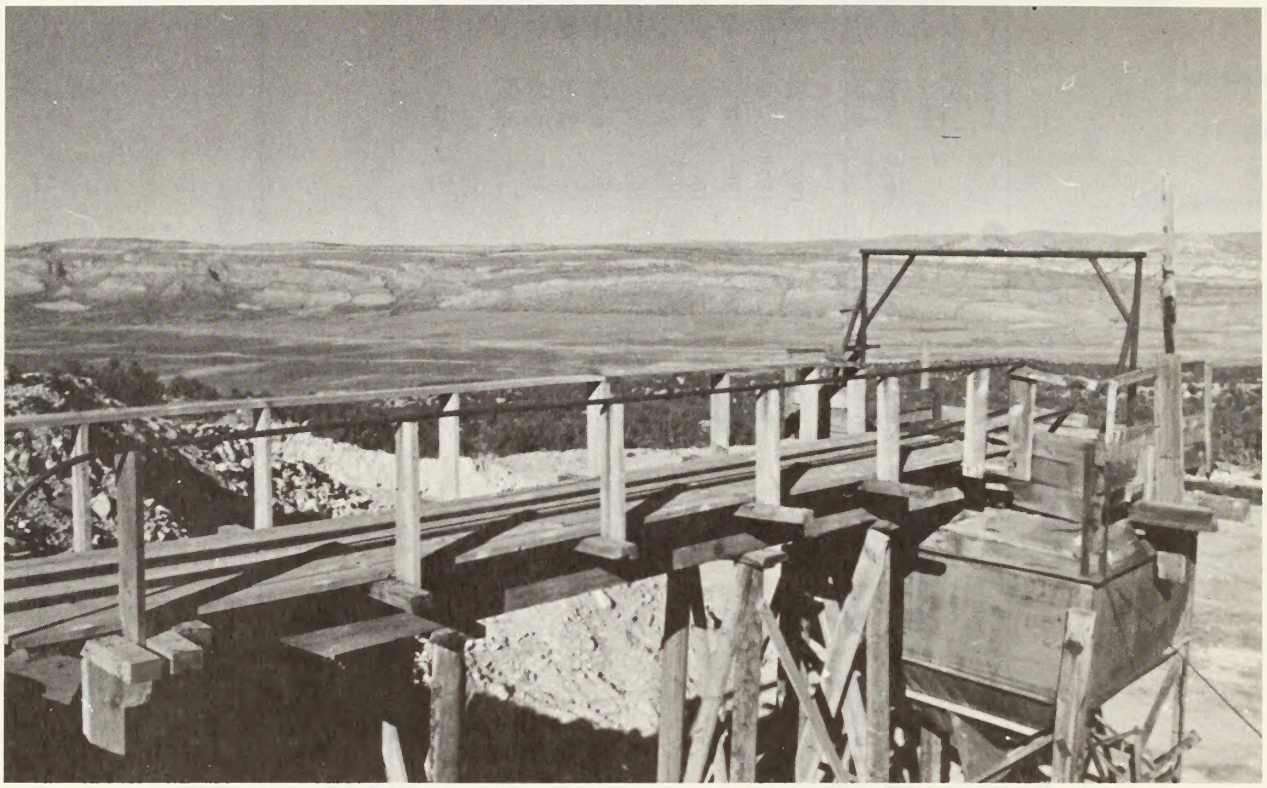


Figure 2-1. San Juan-San Miguel planning area boundaries, showing major towns and counties.

Table 2-1. Selected Climatic Data.

Station	Elevation (m; mean sea level)	Temperatures (°C)					Precipitation (cm)			Mean snowfall	Days	Frost-free periods	
		Extreme minimum	Mean minimum	Annual mean	Mean maximum	Extreme maximum	Annual mean	Monthly maximum	Monthly minimum			Mean (begin date)	Mean (end date)
Cortez	1,885	-33	1	9	18	38	32	4.3	1.0	109	126	5/29	10/2
Durango	1,995	-34	-2	8	18	36	47	6.6	1.8	170	152*	5/18*	10/17*
Fort Lewis	2,315	-37	-3	6	14	34	44	5.6	2.0	201	96	6/13	9/17
Ignacio	1,960	-37	-2	8	18	39	35	4.6	1.5	102	106	6/7	9/21
Mesa Verde N.P.	2,155	-29	3	10	17	37	45	5.6	1.8	201	158	5/14	10/19
Norwood	2,140	-35	-2	7	15	34	36	5.1	1.8	152	109	6/7	9/24
Pagosa Springs	2,205	-43	-4	6	16	37	48	6.4	1.8	315	58	6/21	8/18
Paradox	1,620	-29	1	10	20	40	30	4.3	1.3	61	129	5/21	9/27
Silverton	2,840	-38	-7	2	12	29	57	7.6	3.0	356	10	6/28	7/8
Telluride	2,670	-36	-5	4	13	32	55	7.4	2.5	373	40	6/23	8/2
Vallecito Dam	2,330	-37	-3	6	15	33	64	7.9	2.8	330	112	6/4	9/24
Wolf Creek Pass	2,870	-28	-4	3	11	31	104	12.4	2.8	922	20*	6/24*	7/14*

* U.S. Department of Commerce 1981.
Source: Pedco Environmental, Inc. 1981.



MINE WORKINGS NEAR THE PARADOX VALLEY AREA.

(Under stable conditions, pollutants tend to collect and concentrate in an air basin until regional synoptic winds disperse the air between basins.)

Air Quality

The air quality is believed to be typical of undeveloped regions in the western United States; ambient pollutant levels are usually near or below the measurable limits. Preliminary estimates for pollutant concentrations in the planning area are available in the San Juan Resource Area Office. Locations vulnerable to decreasing air quality from extensive development include immediate operation areas (surface mines, milling operations, power plants, etc.), and local population centers with their induced impacts. Seasonal average standard visual range measurements at Mesa Verde National Park vary from 140 to 240 kilometers.

Most of southwestern Colorado has been designated a Prevention of Significant Deterioration (PSD) Class II (Federal air quality standard) attainment area. Some towns have measured high Total Suspended Particulate (TSP; see Glossary) levels (exceeding increments), but since the cause is primarily natural fugitive dust, these towns have been designated "unclassified" for TSP. PSD Class I areas in the planning area include Mesa Verde National Park and Weminuche Wilderness Area. Lizard Head Wilderness (formerly called the Wilson Mountain Primitive Area which is now part of Lizard Head) is a Colorado Category I air quality area under the U.S. Forest Service's (USFS) jurisdiction.

Minerals

Leasable

Coal. Coal is found in three geologic formations within the planning area: the Dakota, Menefee, and Fruitland. The Dakota sandstone outcrops in the western portion of the area; however, only near the East Cortez and Nucla KRCRAs (Fig. 2-1a) do there appear to be commercial quantities of coal in the Dakota Formation. The other coals in the formation appear to be rather discontinuous, reaching a maximum thickness of 2 feet. In many places only a highly carbonaceous shale is present (Cullins and Bowers 1965). Dakota coal is considered to be of coking quality in the Nucla area and of marginal coking quality in the East Cortez area (see Table 2-2).

The other two formations (Menefee and Fruitland) that contain coal are exposed on the north and northeast margins of the San Juan Basin (Shomaker 1971). Both Menefee and Fruitland coals are considered to be of coking quality dependent on their location in the KRCRA. The Menefee and Fruitland outcrops trend along the northern boundary of the Durango KRCRA in Colorado. Past coal mining in the Menefee and Fruitland formations supported the Denver and Rio Grande railroad spurs and may have also provided domestic needs, while mining in the Dakota Formation mainly provided for local needs.

All of the Nucla (2,080 acres, 35 million tons) and the East Cortez (2,840 acres, 30 million tons) KRCRAs are 100 percent mineable by surface methods. In the Durango KRCRA (143,780 acres), approximately 5 percent (300 million tons) of the area is mineable by surface and underground methods; the remaining 95 percent (5 billion tons) is mineable only by underground methods.

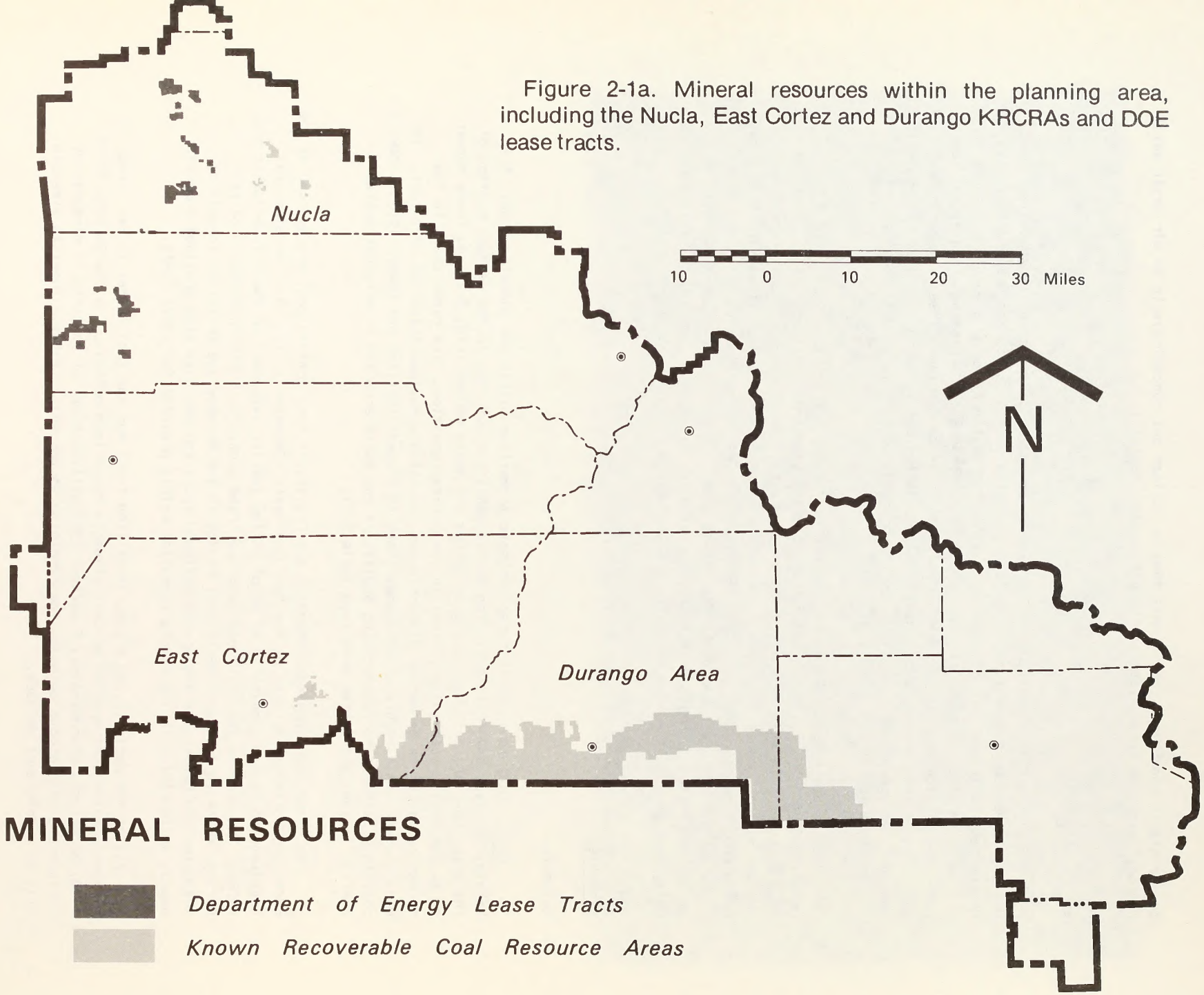


Figure 2-1a. Mineral resources within the planning area, including the Nucla, East Cortez and Durango KRCRAs and DOE lease tracts.

Table 2-2. Quality of Coal in KRCRAs in Planning Area.

KRCRA	Coal formation	Quality	
Nucla	Dakota	Subbituminous C to high-volatile A bituminous rank	
			Percent
		Sulfur:	0.3 to 0.7
		Ash:	11.0 to 28.8
			7,373 to 11,546 Btus
East Cortez	Dakota	Generally thin and discontinuous; High-volatile bituminous B or C rank	
			Percent
		Sulfur:	0.7 to 9.8
		Ash:	14.2 to 18.3
			10,440 to 14,400 Btus
Durango	Fruitland: Durango area	Poor quality due to thin shale partings and high ash content	
			Percent
		Sulfur:	1.3
		Ash:	16.8
			11,900 Btus
	Pagosa Springs area	Medium-volatile bituminous rank	
			Percent
		Sulfur:	0.9 to 1.7
		Ash:	11.4 to 23.4
			10,890 to 12,650 Btus
	Menefee: Durango area	High-volatile, bituminous B or C rank	
			Percent
		Sulfur:	<10
		Ash:	<10
			12,500 to 14,000 Btus

Source: BLM Data 1984.

Coal production in the planning area has been from three major mining operations: the Martinez Strip (Chimney Rock; east of Durango), the King Coal (National King Coal; west of Durango), and the Nucla Strip (see Table 2-3 for breakdown of coal production and Fig. 2-1b)). The National King Coal mine has been the only coal producer from public land in the planning area in the last ten years.

A call for coal resource information was made in early 1983 and expressions were indicated in two areas in the Durango KRCRA, the Chimney Rock and Hay Gulch areas. Based upon the lack of expressions in other areas, this plan focused the unsuitability analysis on only high and moderate lands in the KRCRAs. No expressions were received on the Nucla or East Cortez KRCRAs.

Demand for coal can be expected to increase slightly once leasing begins in the Colorado portion of the San Juan region. Factors that limit increased demand for coal in the planning area are lack of transportation (no nearby railheads) and contracts to purchase any coal that is produced--factors which have considerable influence on the stability of the demand for the coal.

Oil and Gas. Oil and gas production, occurring throughout the planning area, has been and is currently from designated oil and gas fields or trend expressions of those fields (see Table 2-4 for major fields and production). Producing formations are the Lower Ismay and Desert Creek units of the Paradox Member of the Hermosa Formation; Rico

Table 2-3. Coal Production in Planning Area. 1/

Year	Martinez Strip	King Coal	Nucla Strip
1973	-	9,488	106,798
1974	-	9,912	106,723
1975	-	15,790	104,980
1976	-	16,770	97,939
1977	4,366	22,570	94,402
1978	38,677	66,046	102,393
1979	78,786	92,014	121,752
1980	8,425	87,189	93,069
1981	255,013	135,368	60,260
1982	259,477	121,068	61,237
1983 2/	252,500	65,077	41,815
Total	897,244	629,939	991,368

1/ Figures in tons, from 1973 through 1983.
2/ As of December 1983.
Source: State of Colorado Mine Inspections 1983.

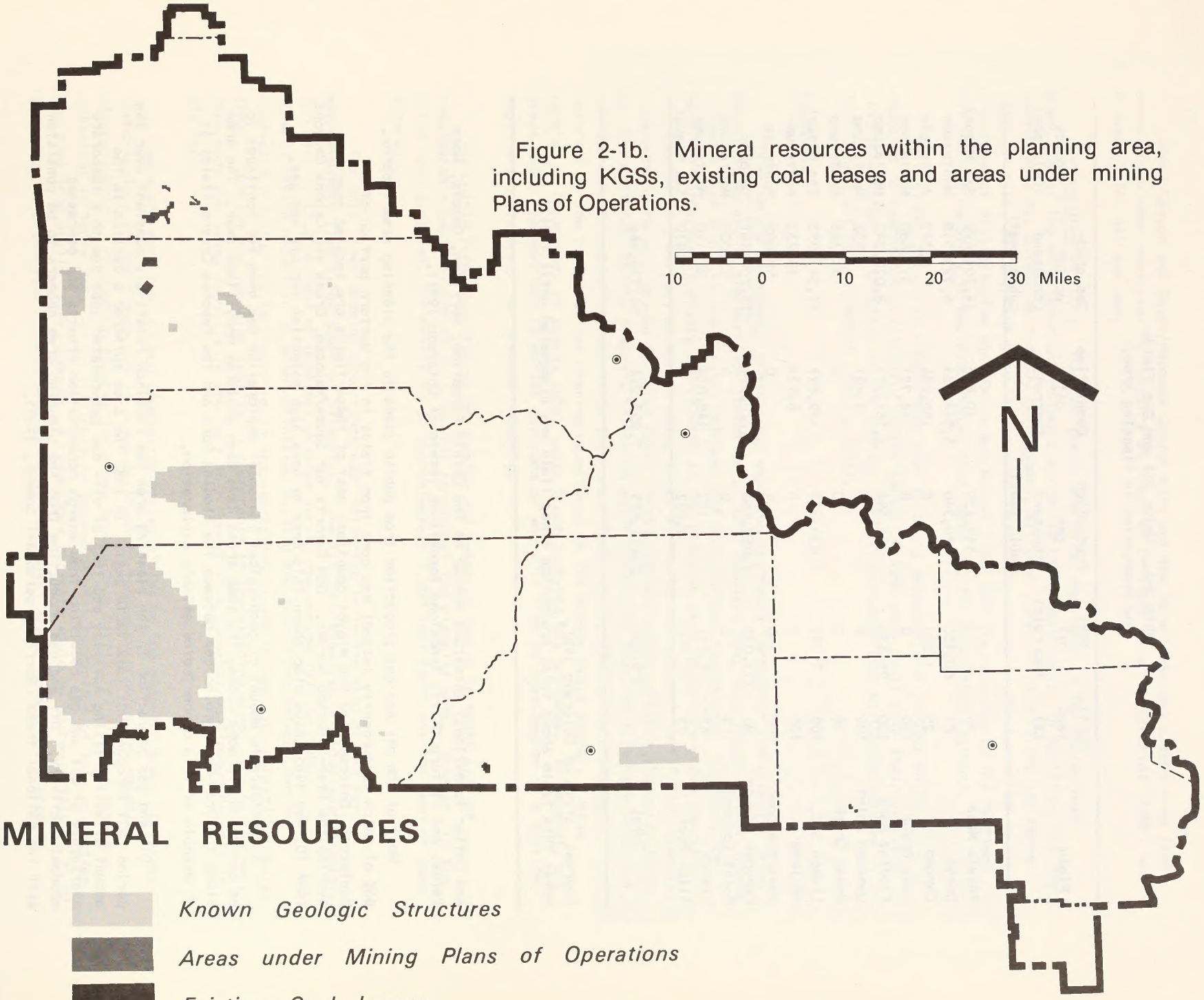


Figure 2-1b. Mineral resources within the planning area, including KGSs, existing coal leases and areas under mining Plans of Operations.

Table 2-4. Major Oil and Gas Fields and Production in Planning Area.

Field	Public land (%)	1981 Oil (barrels)	Production gas (thousand cubic feet)	Cumulative oil (barrels)	Gas production (thousand cubic feet)	County (Colorado)
Andy's Mesa	90	0	349,130	10,696	14,704,629	San Miguel
Cache	67	68,135	78,340	3,514,384	6,723,318	Montezuma
Chromo	25	1,082	0	158,036	6,342	Archuleta
Dove Creek	100	0	0	24,721	372,860	Montezuma
Flodine Park	100	25,530	104,384	2,181,017	8,029,542	Montezuma
Goodman Point	100	0	0	1,401	552	Montezuma
House Creek	10	0	0	0	25,383	Montezuma
Lisbon S.E.	100	7,931	839,233	129,817	11,541,053	San Miguel
McClean	100	0	0	6,124	19,232	Montezuma
Montrose Dome	100	0	0	0	58,092	Montrose
Papoose Canyon	90	113,025	1,055,462	1,720,994	13,200,861	Dolores
Point Lookout	10	0	0	0	23,000	Montezuma
Sierra	45	9,301	132	148,034	27,110	Montezuma
Slick Rock	75	0	4,972	0	4,972	San Miguel
Total		225,004	2,431,653	7,905,224	54,736,946	

Source: State of Colorado 1981.
Note: This table shows total production since field was discovered until 1981.

and Cutler formations; Shinarump Member of the Chinle Formation; Morrison, Dakota, Mesa Verde, and Picture Cliffs Sandstone formations (State of Colorado 1981).

Most of the oil and gas production from public lands in the planning area (approx. 90% of which is currently leased) has come from fields in the western portion of Montezuma, Dolores, and San Miguel counties; most of these fields are located near or overlap the Utah-Colorado border. GEM Reports for Squaw/Papoose, Cross and Cahone Canyons (GRA 10, May 1983) have also shown this area to have high potential for oil and gas.

A considerable amount of geophysical (seismic) exploration has been and continues to be conducted; in some cases, the same areas have been explored many times over. The area along the Utah-Colorado border between the Flodine Park and the Papoose Canyon fields is an example of this concentrated seismic exploration.

Oil and gas production in the planning area has remained relatively constant over the period 1971 through 1981 (see Table 2-4). In 1982 the area suffered a decline in the amount of well drilling activity and loss of oil- and gas-related jobs due to a temporary oversupply of oil and gas resulting from energy conservation efforts and depressed economic activity. Oil and gas production from the planning area appears to be consistent with the national trend (Barrick, personnal commun. 1983).

Cross Canyon and Squaw/Papoose Canyon WSAs and the Rare Snake and Lizard Area (480 acres) have been nominated by industry as Areas of Critical Mineral Potential (ACMP; see Glossary) for oil and gas.

Carbon Dioxide (CO_2). CO_2 gas fields are being developed in the McElmo Dome area, one of the more important projects currently being developed. In addition, the Doe Canyon area has potential for CO_2 development, although very little activity has taken place at this time (Barrick personal commun. 1983). CO_2 occurs in the Leadville Limestone of Mississippian age (Ekren and Houser 1965) and its main use is for tertiary oil and gas recovery in depleted fields (see Table 2-5 for production figures).

Current CO_2 demand is higher than what is being produced, but production is expected to increase significantly in the spring of 1984 when Shell puts their pipeline into production. Production should average one billion cubic feet of CO_2 per day by 1988 (Shell Oil Co., personal commun. 1983).

Locatable

Uranium and Vanadium. Uranium and vanadium are found throughout the planning area, occurring mainly in the Morrison Formation of late Jurassic age; to a lesser extent, these elements also occur in the Chinle, Entrada, and Burro Canyon formations. Although the Morrison Formation is widely distributed in the planning area, major ore-grade deposits are located in a narrow, elongated area, known as the "Uravan mineral belt," that extends from Gateway through Uravan to Slick Rock. Production has occurred since the early 1900s and has continued to the present. Although major production from the Salt Wash Member of the Morrison Formation has been from this area (Thamm et al. 1981), there has been interest in the potential for uranium occurrence in the Brushy Basin Member; a mine located on Department of Energy (DOE) Lease Tract C-SR-16A has produced. In general, any areas where the Morrison Formation outcrops or where it lies to some degree at a shallow depth are of interest for uranium recovery.

The Chinle Formation (the major uranium and vanadium source in Utah) lies at considerable depth (1,600 ft to 3,900 ft) throughout the planning area. However, in the Slick Rock district, the Chinle is at approximately 1,500 feet depth and has been of some interest.

The only known uranium occurrence near Silverton is in the area of Elk Park approximately five miles south of Silverton. The Elk Park Mine has produced approximately 300 tons of (0.2 percent or greater) uranium during the period 1978 to 1980. Mineralization occurs in an area of intense folding and fracturing between two major east-west trending faults occurring in the quartzites of the Uncompahgre Formation (Bailey 1982). Uranium and vanadium quality is comparable in the planning area. Ore bodies vary from pods and lease deposits in the Salt Wash Member to a somewhat continuous deposit in Elk Park.

There are more than 66,000 unpatented mining claims in the planning area. Of these, approximately 62,000 claims are in areas of known or suspected uranium and vanadium mineralization. Production figures for these commodities within the planning area are contained in Table 2-6. It is difficult to determine what percentage of this production has come from public lands; however, a reasonable estimate would be approximately 95 to 97 percent. No production figures are available for recent years; however, the drop in

TRAM TOWER FOR HAULING ORE FROM A NOW-ABANDONED MINE IN EUREKA GULCH NEAR LAKE EMMA (SILVERTON, COLORADO).

Table 2-5. Annual Oil and Gas and CO_2 Production in Planning Area.

Year	Oil (barrels)	Gas (thousand ft^3)	CO_2 (thousand ft^3)
1971	346,594	31,069,658	132,690
1972	467,856*	31,658,395*	159,447
1973	678,402	35,462,107	142,813
1974	616,409	29,595,888	123,016
1975	555,849	29,218,297	229,382
1976	452,440	29,102,462	317,720
1977	398,622	30,760,888	574,087
1978	373,793	28,096,053	542,779
1979	367,486	29,658,747	678,101
1980	287,724	29,404,610	634,514
1981	444,830	30,741,365	727,930
Total	4,490,005	308,768,470	4,262,479

* Includes total production from Colorado counties in planning area, 1971 through 1981.
Source: State of Colorado 1981.

Table 2-6. Uranium and Vanadium Production in Planning Area.*

Year	Uranium/lb	Price/lb	Vanadium/lb	Price/lb
1973	444,472	6.00	2,610,377	1.70
1974	720,207	8.00	3,832,643	2.37
1975	694,254	10.65	4,503,105	1.87
1976	525,341	16.66	8,287,705	0.80
1977	1,516,774	18.36	11,801,283	2.04
1978	1,474,252	15.14	7,398,004	0.70
1979	1,611,422	18.74	17,181,807	1.00
1980	1,162,785	14.70	6,968,323	0.85
Total	8,149,507		62,130,447	

* 1973 through 1979.
Source: State of Colorado 1980.
Note: Data are unavailable to present date (1984).

uranium price, decline in exploration activity, and some mine closings are good indications that production is down. GEM Reports (GRA 8 May, 1983) have also shown possible mineralization in Sylveys Pocket area and in the Upper Bull Canyon (the Dolores River Canyon area).

Other Minerals. The Silverton area has produced gold, silver, copper, lead, zinc, and tungsten, which may occur in veins radial to the rim of the Silverton caldera, chimneys, breccia pipes, or as disseminated and replacement deposits. The vein systems are by far the most important type of mineral deposit (Burbank and Luedke 1969; Varnes 1963) and this area is one of the more significant alteration-type deposits in the state.

In the La Sal Creek mining district, copper and silver have been produced from the Cashin and Cliffdweller mines (Sec. 22, T. 47 N., R. 19 W.). The ore deposits occur in steeply dipping fault zones that cut the Wingate sandstone and extend downward into the underlying formations (San Miguel Resource Area Unit Resource Analysis 1977).

Placer gold mining occurs along the numerous rivers and creeks whose headwaters originate in the San Juan Mountains--specifically, the San Miguel, Animas and Mancos rivers. The main interest in placer gold has been along the San Miguel River. Moderate, weekend type interest has been indicated in the Silverton area.

Placer gold deposits commonly occur in terrace gravel deposits above water level. The placer gold deposits of the San Juans are difficult to recover due to the fineness of the flakes (thus the name flour gold). Approximately 4,000 to 5,000 mining claims are located in the Silverton area. The majority of mineral production for other minerals is being obtained from land other than public land.

The increased price of gold has caused a surprisingly low increase in exploration and production activity. Independent interest has increased as would be expected; however, large operations that originally displayed interest have dropped off somewhat. It appears that demand for base and precious metals in the planning area is relatively stable. Economics and transporation are probably the limiting factors to increased activity in base and precious metals.

Saleable

Sand and Gravel. Sand and gravel deposits of road-surfacing quality are found throughout most of the planning area along major river drainages as well as throughout some of the associated tributaries. Along the margins of major drainages, varying sizes of terrace deposits occur. In areas adjacent to the San Juan Mountains (particularly the Animas Valley), all of the gravel deposits are probably either directly or indirectly of glacial origin; small isolated deposits occur along Disappointment Creek. One rather large deposit involving public land exists approximately two miles south of Durango on Ewing Mesa; considerable interest has been expressed in this deposit.

In the western portions of Montezuma, Dolores, and San Miguel counties, true sand and gravel deposits are either rare or non-existent. Road maintenance and upgrading are accomplished with crushed sandstone. In the Silverton area the major source of road-surfacing material has been from colluvial deposits, which consist of talus and slope wash materials.

Public lands generally do not contribute significantly (less than 10%) to sand and gravel production in the planning area and the potential generally does not exist for public sand and gravel resources contributing significantly to the local situation.

Vegetation

The San Juan-San Miguel planning area is exemplified by seven major vegetation types (see Table 2-7). Of these, three types account for 87 percent of the vegetation present--(1) pinyon-juniper woodland (60%), (2) sagebrush-grassland complex (18%), and (3) salt desert shrub (9%).

Table 2-7. Vegetation Types and Subtypes Present in Planning Area.

Type	Acreage (percent of total vegetation)	Subtype
Pinyon-juniper woodland	599,800 (60)	Pinyon pine & juniper*
Conifer forest	52,800 (5)	Ponderosa pine, Engelmann spruce-subalpine fir, & Douglas-fir
Sagebrush-grassland	181,800 (18)	Big & black sagebrush, winterfat, short, mid, and tall grass spp.
Salt desert shrub	88,400 (9)	Shadscale, mat, & four-wing saltbush, & black greasewood
Mountain shrub	24,400 (3)	Oakbrush, mountain mahogany, serviceberry, willows, & bitterbrush
Alpine tundra	40,000 (4)	Sedges & high altitude grass spp. & forb spp.
Riparian	6,800 (1)	Sedges, rushes, willows cottonwood, alder, and birch
Total acreage	994,000	

* This figure includes 4,500 acres of aspen.
Source: BLM Data 1984.

Riparian

Riparian vegetation is present throughout the planning area in association with river bottoms and other perennial and intermittent streams. Totaling less than 1 percent of the land acreage in the area, riparian vegetation still is a vital ecological component of the environment. It provides many valuable and diverse habitat features essential to many species of terrestrial and aquatic wildlife. Overall, the riparian vegetation type has a high potential for recovery and improvement following disturbance.

Sagebrush-Grassland Complex

These communities, comprising 18 percent of the total land coverage in the planning area typifies the major vegetation type in the upper valley and basin terrain that range between 5,000 feet and 7,500 feet in elevation. Large areas in this vegetation complex are classified as crucial winter range for several big game wildlife species. Higher elevation and precipitation areas with deeper soils have a good potential for recovery and revegetation subsequent to disturbance.

Salt Desert Shrub

Salt desert shrub communities constitute 9 percent of the total area and are confined to the Western basins and valleys, with elevations between 4,500 feet and 6,000 feet. These communities are characterized by soils with high salt contents and have a limited potential for vegetation production, recovery, and revegetation following disturbance.

Mountain Shrub

Mountain shrub communities comprise 3 percent of the planning area and are confined to the upper foothill zone and the lower edge of higher mountain topography. Elevation ranges between 6,000 feet and 9,000 feet. The mountain shrub type is typified by vegetation species that are important forage and cover for many wildlife species. Most mountain shrub communities are located on steep slopes within a broken topography; thus, the revegetation potential is limited.

Pinyon-Juniper Woodland

Pinyon-juniper woodland comprises 60 percent of the total land coverage and 93 percent of the forest land base in the planning area. These communities, found between 5,000 feet and 7,800 feet in elevation and containing important cover and forage values for many wildlife species, are a distinct ecosystem to be managed and perpetuated for producing multiple resource values. Large continguous blocks of operable pinyon-juniper woodland pose a reclamation problem because of the long growing rotation (150 years). Stands of poor commercial value typically occur on more marginal soils and in areas of lower precipitation, which limits the revegetation and reclamation potential (see Table 2-8).

Conifer Forest

Conifer forest, predominately ponderosa pine and Engelmann spruce-subalpine fir, constitutes 5 percent of the total land acreage in the planning area. Ponderosa pine, found from 7,800 feet to 9,000 feet in elevation, is a valuable timber resource and also

important habitat for many wildlife species. Because it occurs on deeper soils and higher precipitation areas, the reclamation potential in ponderosa pine type is good. Spruce-fir occurs from 9,000 feet to 11,000 feet in elevation. However, the high elevation topography and difficult access limited the use of this forest type in the past, but it is presently emerging as one of the more important timber resources.

Alpine Tundra

These communities, which provide important big-game summer forage, constitute 4 percent of the planning area and are found between 11,000 feet and 14,000 feet in elevation. Alpine tundra communities consist of many high altitude species of sedges, grasses, forbs, and shrubs. Many areas above timberline are steep, rocky, and essentially devoid of vegetation. Due to the high altitude, short growing season, and poorly developed soils, the reclamation potential in the alpine tundra type is seriously limited.

Vegetation Inventory

A vegetation inventory conducted during 1980 through 1982 classified the suitability and present ecological condition of 889,400 acres of public land in the planning area for grazing. Following site descriptions developed by Colorado's SCS, vegetation communities were placed in one of five categories (excellent, good, fair, poor, and unclassified; see Appendix 9-G for condition ratings). Less than 1 percent of the public lands inventoried are in excellent ecological condition, 3 percent, good; 23 percent, fair; 39 percent, poor; and 34 percent remains unclassified (including all revegetated areas, woodlands, and steep-rocky unsuitable lands). Revegetated lands comprise approximately 59,000 acres or 18% of the unclassified acres. Approximately 57,000 acres of public land were not inventoried and no vegetation condition information is available.

Vegetation condition is a classification system that groups plant communities according to the degree of successional change from the expected climax plant community. This allows for developing management objectives related to ecological conditions, but

Table 2-8. Suitable Conifer Forest and Operable Pinyon-Juniper Woodlands Within Planning Area.

Type	Acreage	Subtype
Conifer forest	13,000	Ponderosa pine, Englemann spruce-subalpine fir, & Douglas-fir
Pinyon-juniper woodland	66,500	Pinyon pine & juniper

Source: BLM Data 1984.

vegetation condition is not necessarily consistent with grazing use values. Fair ecological condition may represent good livestock forage condition, such as a chained area where brush and tree species have been removed to promote grasses and forbs. A climax plant community represented by excellent ecological condition may not provide better protection from soil erosion than a plant community in good ecological condition.

Threatened, Endangered, and Sensitive Plants

Federally-listed threatened, endangered, and sensitive plants were considered throughout the San Juan-San Miguel planning area in compliance with the Federal Register (Vol. 45, No. 242, December 15, 1980). The one species that is included on the Federal list of endangered plants appears in Table 2-9. The four species that are included on the Federal list of sensitive (probable threatened or endangered) plants appear in Table 2-10. A baseline inventory was conducted in the summer of 1982 to identify existing and potential habitat for the endangered spineless hedgehog cactus (Echinocereus triglochidiatus).

Table 2-9. Endangered Plants Occurring Within San Juan-San Miguel Planning Area.

Scientific plant name/ common name	Habitat	Location/ county
Echinocereus triglochidiatus/ Spineless hedgehog cactus	Rocky soils in open pinyon-juniper stands, flat aspects of mesa tops	Paradox Valley (Montrose)

Source: BLM Data 1984.

Table 2-10. Sensitive Plants Occurring Within San Juan-San Miguel Planning Area.

Scientific plant name/ common name	Habitat	Location/ county
Erigeron kachinensis/ Kachina daisy	Caves in limestone cliffs, moist crevices with water seeps	Dolores River (Montrose)
Lupinus crassus (none)	Loose shale soils	Paradox Valley and Nucla (Montrose)
Mertensia arizonica var. granamii	Moist alkaline soils of seeps on sandstone ledges	Dolores River (Montrose)
Mimulus eastwoodiae/ Eastwood monkey flower	Shallow alcoves & caverns with water seeps	Dolores River (Montrose)
Phlox caryophylla/ Phlox	Sagebrush slopes & flats, often on Mancos shale	(Archuleta, La Plata, Montezuma)

Source: BLM Data 1984.

THREATENED species with potential habitat but having no known occurrence on BLM lands in our area are:

Scientific name/Common name	Habitat
Sclerocactus glaucus/Uinta Basin hookless cactus	Gravelly flats, low hills, sparse vegetation
Sclerocactus mesae-verdae/ Mesa Verde cactus	Low clay hills & mesa sides, sparse vegetation

ENDANGERED species with potential habitat but having no known occurrence on BLM lands in our area are:

Scientific name/Common name	Habitat
Pediocactus knowltonii/Knowlton hedgehog cactus	Gravelly hilltops with open pinyon-juniper stands

Soils

Intensive soil surveys have been conducted via interagency agreements with SCS on most of the planning area--the San Miguel Soil Survey (San Miguel, western Montrose, and central Dolores counties); the Cortez Soil Survey (Montezuma and western Dolores counties); and the La Plata County Survey (public land in La Plata County). BLM-administered land in San Juan and Archuleta counties and a small area in Rio Arriba County, New Mexico, were mapped during 1983. Detailed soil survey coverage has been accomplished with the exception of small, scattered tracts in the Pagosa Springs area.

Vegetation cover data were collected between 1980 and 1982 on approximately 347,000 acres (37% of the planning area) in the northern portion. Annual sheet erosion rates were calculated using that cover data and the Universal Soil Loss Equation (USLE). The erosion rates for these sites were then categorized as natural or slightly accelerated, moderately accelerated, and severely accelerated (see Table 2-11).

Gully erosion, recorded during the inventory, is severe in Disappointment, Paradox, and Gypsum valleys, Dry Creek Basin, Ross Fort Park, Broad Canyon, the Mud Springs area, and along some of the intermittent drainages that flow south into McElmo Creek. Localized, severe gullying and rill erosion also occurs in the Silverton area, primarily as a result of extensive ORV use, poor road maintenance, and postmining activity.

Wind erosion or soil blowing is generally not severe except in very localized situations where vegetation cover is sparse on sandy soils. The small sand dunes in Flodine Park and Yellowjacket Canyon are susceptible to severe wind erosion. Overall trends in erosion condition have not been established; they will be monitored as funding and manpower permit.

Table 2-11. Erosion Trends on Public Lands Within Planning Area.

	Erosion rates		
	Natural or slightly accelerated	Moderately accelerated	Severely accelerated
Public land acres with available data	108,611	121,430	117,243

Source: BLM Data 1984.

Water Resources

Surface Water Resources

Water Quantity. The RMP lies within two major subbasins of the Upper Colorado River Basin, the Dolores and the San Juan. The Dolores and San Juan river systems typically

experience peak flows, primarily from snowmelt, between April and June. Low flows occur during late fall and winter and are comprised mostly of ground-water discharge. The majority of the lower elevation drainages receives little annual precipitation and as a result experiences intermittent or ephemeral flows. High-intensity summer thunderstorms are common occurrences throughout the planning area and often result in high peak discharges of short duration.

In Colorado, the San Juan River Basin drains approximately 5,800 square miles, 8 percent of which (or 464 sq mi) is managed by BLM's San Juan Resource Area. These major tributaries drain the Colorado portion of the San Juan River Basin--the San Juan, Piedra, Los Pinos, Animas, Florida, La Plata, Mancos, and McElmo.

Collectively, these drainages annually produce an average of 1.5 million acre-feet of water. In addition, more than 1 million acre-feet annually is diverted for irrigation, municipal, domestic, industrial, recreational, and transmountain and transbasin diversions uses. In the planning area, there are approximately 3,739 acres located in Rio Arriba County, New Mexico (in the San Juan River Basin), for which there are no water resource data presently available.

Where it leaves the RMP area, the Dolores River drains approximately 3,800 square miles; 29 percent (or 1,083 sq mi) of which is managed by the BLM Montrose District. This portion of the Dolores River Basin annually discharges an estimated 600,000 acre-feet to 650,000 acre-feet of water to the Dolores River. In addition, an annual estimated average of 275,000 acre-feet is diverted for irrigation, municipal, domestic, industrial, recreational, and transbasin diversion uses. After the McPhee Dam is completed, the amount of water diverted could change significantly.

Silverton, Colorado, is presently the only municipality obtaining surface water directly from BLM land (the Boulder Gulch watershed) for a public water supply. Several other municipalities, including Nucla, Naturita, and Durango, obtain their water from major surface-water drainages whose watersheds have acreage under BLM management (see Fig. 2-2).

The water yield from public land in the planning area is quite variable, factors controlling it include soil type, vegetation type and density, elevation, slope, and the amount, duration, and intensity of precipitation.

Water Quality. Throughout the planning area, the water quality varies considerably with most of the high quality water found in the higher elevations. The water quality parameters of major concern are sediment, salinity, heavy metals, and biologic pathogens. The water quality is presently managed in accordance with the Clean Water Act of 1977, Colorado State Water Quality Standards, and The Colorado River Basin Salinity Control Act of 1974.

Throughout the Colorado River Basin, a growing water quality concern is salinity. Salinity concentrations in the Lower Colorado River Basin have been progressively increasing due to continued development and water use by agriculture, municipalities, and industry there. To aid in reversing this trend, BLM's present direction is to identify and control diffuse (nonpoint) salinity sources on public lands.

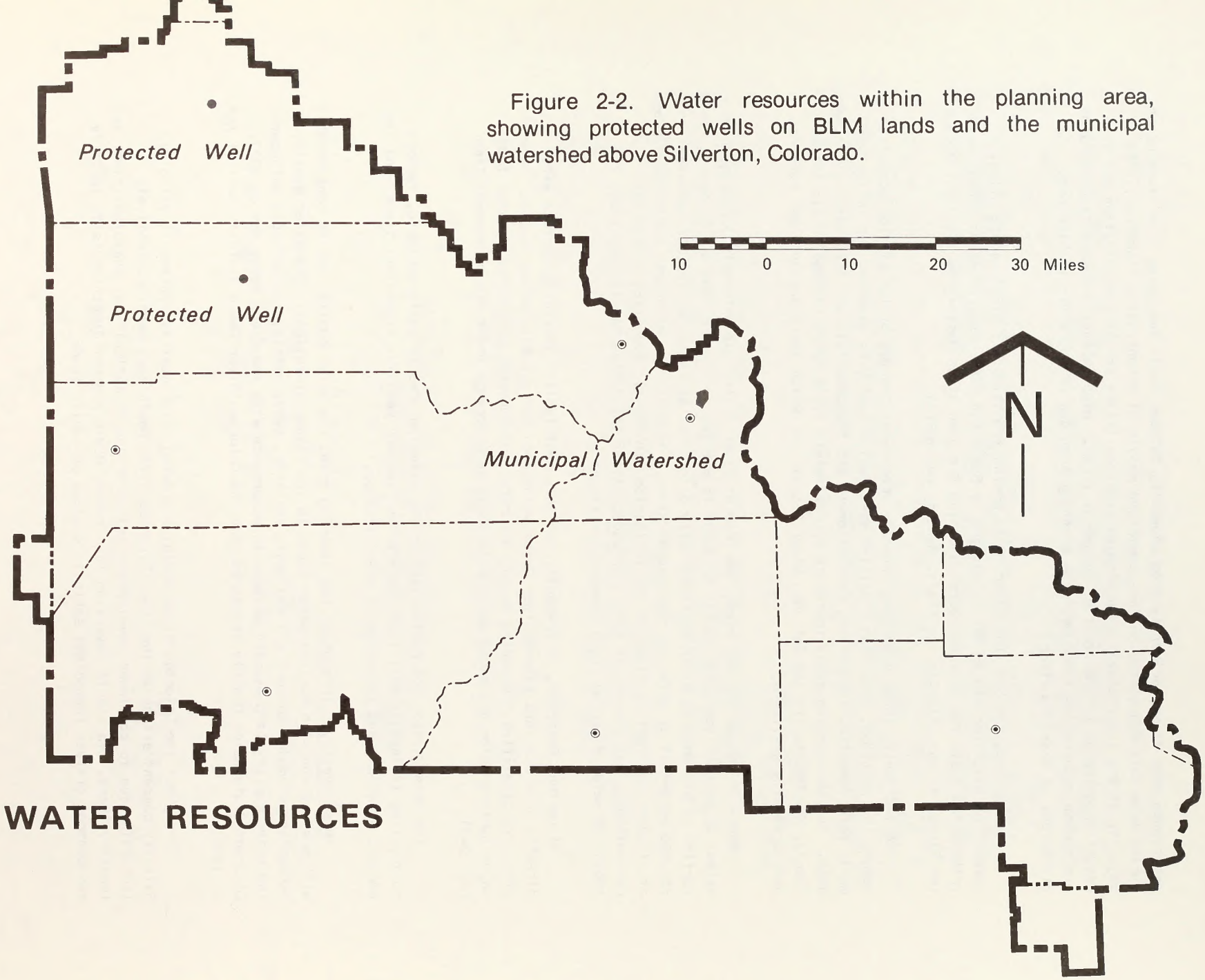


Figure 2-2. Water resources within the planning area, showing protected wells on BLM lands and the municipal watershed above Silverton, Colorado.

WATER RESOURCES

Within the planning area, there are approximately 17,000 acres of saline soils on public land that potentially contribute salt to the Lower Colorado River Basin. The highest concentration of these soils can be found in the Disappointment Valley where more than 16,000 acres of highly saline soils and underlying saline marine-deposits each year contribute several thousand tons of salt to the Colorado River Basin. Before salinity control measures are identified for this area, a better understanding of the local hydrology and salt-loading mechanisms is needed. The limited amount of existing data suggests that both ground-water and subsurface flow processes are, to some degree, responsible for high salt yields, which would render surface control measures relatively useless. Therefore, this area will require additional hydrologic and salinity studies and analyses.

Other major diffuse sources of salinity in the RMP area are Paradox and Big Gypsum valleys and Dry Creek Basin. A listing of point salinity sources can be found in BLM's Montrose District (BLM Data 1984). The two basic types of salinity control measures that could be employed on diffuse salinity sources are using physical structures such as retention dams, gully plugs, etc., and reducing activities on saline soils that result in soil compaction. Both of these techniques reduce or retain surface runoff and sediment, which are the primary salt transport mechanisms. Indirect benefits such as increased forage, water for wildlife and livestock, and flood and sediment control could be derived from these salinity control techniques.

Within the planning area, there are currently several areas exhibiting high or very high sediment yields. Characteristically, these areas have erosive soils coupled with sparse vegetation and little annual precipitation. Sediment has resulted in on-site problems such as lowered land productivity and shortened, useful life of in-channel water developments. Downstream sediment increases water treatment costs and reduces the life of irrigation equipment. Several areas have experienced accelerated or man-caused increases in the sediment yield, which is primarily a result of land-surface disturbing activities such as grazing, mineral exploration and mining, and, in a few cases, ORV use. Both unmaintained roads and water developments have also resulted in increased sediment yields throughout the planning area.

Since sediment is one of the primary salt transport mechanisms on diffuse salinity sources, dual benefits could be derived by reducing sediment yields from Paradox, Big Gypsum, and Disappointment valleys, and Dry Creek Basin watersheds.

Presently, there are little data quantifying the accelerated sediment yields in the RMP area. Visual observations have been the primary means of identifying these areas; therefore, to efficiently develop treatments to reduce accelerated sediment yields, additional inventories and studies are needed.

The Upper Animas River drainage exhibits acid and heavy metal pollution from both natural and man-caused (i.e., hard-rock mining) processes. The present management of these water resources is strictly to prevent further water quality degradation. Improving the water quality in this drainage has been limited by a lack of funding and workforce, the lack of a long-term water quality data base (needed to efficiently select reclamation sites), and, in some cases, determining which party has the reclamation responsibility. It appears that much of the mining that is causing water quality problems was performed in a legal fashion, leaving the liability of past mine owners and operators in question.

Some of these problems could be resolved and low cost and low maintenance reclamation techniques recently developed by the Colorado Mined Land Reclamation Division could be

employed to upgrade the water quality. In Colorado, an experiment using these techniques on metal mine drainage reduced the pollution load by an average of 85 percent.

The terms "Passive Mine Drainage Treatment" have been applied to those techniques that rely basically upon natural geochemical and biochemical processes for acid neutralization and metals removal (see the Uncompahgre Basin Resource Area Office, BLM's Montrose District, for additional information).

Improving the water quality in the Upper Animas River drainage would be in accordance with the Clean Water Act of 1977 (as amended by PL 95-217) and would benefit other resources such as range, wildlife (both terrestrial and aquatic), and recreation.

Ground-Water Resources

Water Quantity. On a regional scale, ground water within the planning area is commonly found in the Dakota and Cliffhouse sandstones and the Menefee and Morrison formations (Price and Arnow 1974). More localized ground water is encountered in the alluvium associated with many of the drainage channels throughout the planning area. Generally, ground water moves from areas of recharge to areas of discharge (i.e., springs, seeps, and wells). According to Price and Arnow (1974), the majority of the planning area receives sufficient annual precipitation (>12 in.) to be considered a significant regional ground-water recharge area. However, ground-water recharge is most significant along the high mountain areas and in lower lying areas where permeable geologic formations outcrop (i.e., portions of both the Dolores and San Juan River basins).

Specific information on ground-water use is fairly limited within the planning area. Several municipalities use ground water for their public water supplies; however, only the town of Uravan, Colorado, is using ground water (via wells) directly from public land. Another well located in Dry Creek Basin on public land is used for both domestic and livestock purposes.

Ground-Water Quality. Salinity is one of the largest constraints to developing the planning area's ground-water resource. Some sandstone and marine-deposited aquifers can yield water with TDS concentrations of more than 20,000 parts per million (ppm; as a comparison, the ocean is approx. 33,000 ppm). In the northern portion of the planning area, Paradox Valley lies along a collapsed salt anticline and discharges ground water into the Dolores River containing more than 250,000 ppm, TDS.

Wildlife Resources

Terrestrial Wildlife

For terrestrial wildlife, BLM emphasizes habitat management determined by legal status (T & E species) or commercial value for species of interest to Federal and State agencies. Most terrestrial wildlife program funds concentrate on habitat management for big game species or for endangered species. Without funds, management strategy tries to mitigate impacts of other resource development and attempts to design other resource projects to obtain additional wildlife benefits. Unless specific problems or conflicts are identified, most wildlife species' management involves mitigating actions of other resource programs to maintain or allow gradual habitat improvement. Where resources are

determined to be deteriorating due to excessive numbers of wildlife and improvements in habitat cannot compensate for this in the short term, requests may be made to the CDOW to reduce wildlife populations through increasing hunting.

Big-Game Species. Mule deer (Odocoileus hemionus) and elk (Cervus elaphus) are common year-round residents in some portions of the planning area and seasonal occupants in other parts. Both species tend to migrate between forested lands at higher elevation in the spring and summer to woodlands at lower elevation in the fall and winter. Average herd densities are relatively low in summer (2-3 deer/sq mi) due to the large amount of available habitat. Winter herd densities may exceed 100 deer per square mile on some crucial winter ranges because snow depths limit habitat suitability. Migration between winter and summer ranges may exceed 50 miles in this region. CDOW has documented deer migration of more than 70 miles (by marked animals).

Total winter range populations on BLM-administered lands may approach 30,000 mule deer and 7,000 elk (these are maximum estimates, not averages that are used in Chapter 3) during years of severe winter weather. This estimate counts young of the year as adults because they would be foraging during the winter season. Total summer range populations on BLM lands are probably nearly 5,000 deer and 400 to 500 elk (see Fig. 2-3).

Pronghorn antelope (Antilocapra americana) have been reintroduced to the planning area by CDOW. Early releases in Disappointment and Big Gypsum valleys were only partially successful--only small bands survived in each area. Since 1979, about 150 additional antelope have been released in the Dry Creek Basin. These animals have shown a slight increase since being introduced and presently number approximately 175 head; CDOW's management objectives are to increase the herd to 300 animals.

Rocky Mountain bighorn sheep (Ovis canadensis) and introduced mountain goats (Oreamnos americanus) are found year-round in the alpine and subalpine areas near Silverton. Three other small bands of bighorn sheep occasionally migrate onto public lands near Durango, Mesa Verde, and Placerville. A band that was released on Mesa Verde National Park was later observed to have moved onto Weber Mountain. Sightings have also been reported from the Ute Reservation to the south of Mesa Verde. Some winter use occurs on scattered tracts of BLM in the Placerville-Sawpit area. Population size data are limited due to the difficulty of locating the animals and the lack of workable techniques used in taking census. Animas Mountain receives winter use by 6 to 8 bighorns that migrate south from the Hermosa Creek area in severe winters.

Black bear (Ursus americanus) are relatively common throughout the conifer forest zone in the southwest Colorado region. They require extensive territory and self-sustaining populations on BLM land would probably only occur in the Silverton, Weber and Menefee areas, and the south slopes of the Uncompahgre Plateau. However, most public land with oakbrush-ponderosa pine habitat is probably used by bear in conjunction with undeveloped private and USFS lands. Isolated occurrences of black bear in pinyon-juniper woodland areas have also been confirmed (Gresh, personal commun., 1981).

Mountain lions (Felis concolor) are year-round residents throughout the planning area in ponderosa pine, pinyon-juniper, and semidesert habitats. They also require extensive territories, but BLM lands have more than enough suitable habitat to support self-sustaining populations of mountain lions in the area north from Disappointment Valley and west of Cortez. Trophy-sized lion are not uncommon, and a world record lion was taken west of Cortez recently (Gresh, personal commun. 1981).

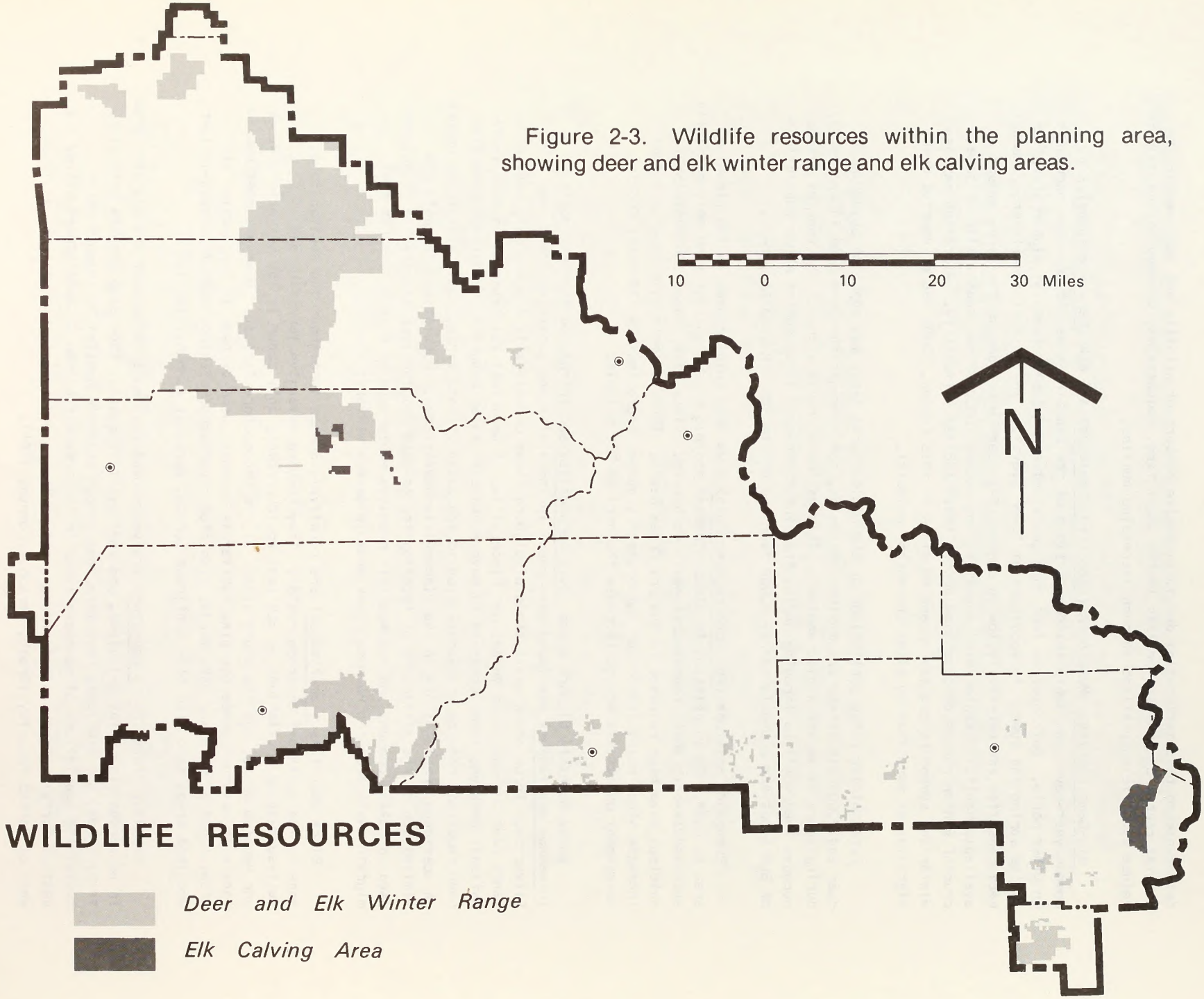


Figure 2-3. Wildlife resources within the planning area, showing deer and elk winter range and elk calving areas.

Small Game and Waterfowl. Sage and blue grouse, chukar, quail, wild turkey, ptarmigan, and pheasant are present in small numbers in scattered localities throughout the planning area. Pheasants are mainly dependent on nearby agricultural land, while the others are associated with native rangeland, alpine and forest habitats. Sage grouse strutting and nesting grounds have been identified in the vicinities of the Dry Creek Basin and Miramonte Reservoir (see Fig. 2-4).

Band-tailed pigeons nest in conifer forest habitat and forage as well as throughout the mountain shrub-grassland type. Populations are small; they are generally considered uncommon birds in the region. Mourning doves are numerous and constitute a major sport resource on public lands near Cortez and Dove Creek, drawing many out-of-state hunters into the area. They are ground and tree nesters in all habitat types from ponderosa pine to salt desert shrublands. In 1983, CDOW released 200 Gambel's quail into the Paradox Valley with hopes of establishing a viable population.

Waterfowl are most numerous during spring and fall migrations when they stop to rest and feed at stock ponds and on streams. Nesting and brooding habitat are limited due to the intermittent availability of water. Mallards are the primary nesting species found in the planning area.

Aquatic Habitat

There are an estimated 400 miles of stream habitat in the planning area that run through lands administered by BLM, which includes approximately 120 miles that were intensively inventoried in 1980 and 1981. The remaining 280 miles of aquatic and riparian habitat are considered as potential habitat that warrants further investigation and that is expected to provide additional quality habitat. At least it will probably present opportunities for future development.

Of the 280 miles that were not intensively inventoried for the plan (see Table 2-12), the San Miguel River comprises approximately 25 miles on BLM lands. The Dolores River has an estimated 120 miles of aquatic and riparian habitat running through BLM land and the Animas River runs through nearly 16 miles of BLM land. The remaining 123 miles of stream habitat on BLM lands are principally those tributaries associated with those three major drainages. The breakdown (in terms of habitat quality) for all 144 miles of inventoried aquatic and riparian habitat is: 1 percent, excellent condition; 5 percent, good condition; 46 percent, fair condition; and 48 percent, poor condition (see Table 2-13).

The major game species observed in the streams was rainbow trout; some of the streams also contained brook, brown and cutthroat trout. Other species included suckers, shiners, cottids and some species that remain unidentified.

One of the major habitat features within the scope of this plan is managing the Dolores River, which will be a coordinated effort between BLM, the CDOW, and the USFS. It is anticipated that McPhee Dam will provide excellent opportunities for both cold and warmwater fisheries development through habitat management and stocking procedures. The San Miguel River is another area of particular concern and should be targeted for intensive aquatic habitat management because of the ease of public access and the number of miles of tributaries associated with it.

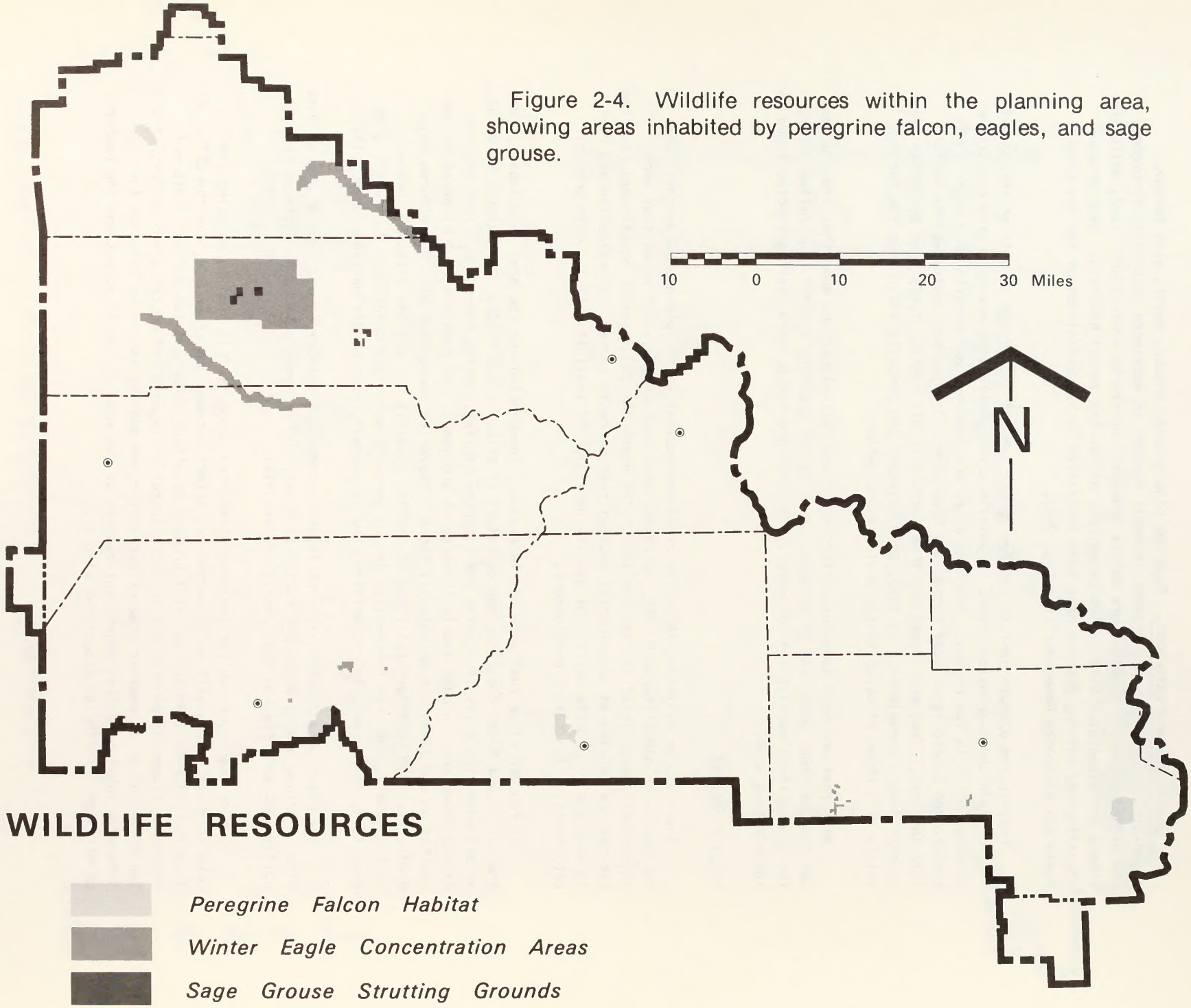


Figure 2-4. Wildlife resources within the planning area, showing areas inhabited by peregrine falcon, eagles, and sage grouse.

Table 2-12. Miles of Stream and Riparian Habitat Not Inventoried Within Planning Area.*

Stream name	BLM miles
San Miguel River	25.0
Huff Gulch	1.5
Goat Creek	0.5
Little Bucktail Creek	1.5
Big Bucktail Creek	3.0
Coal Canyon	11.0
Campbell Creek	7.0
Spring Creek	8.0
Subtotal	57.5
Dolores River	120.0
Little Gypsum Creek	4.0
San Miguel Creek	6.0
Bush Canyon	6.0
Bill Creek (tributary to Bush Canyon)	2.0
Spring Creek (tributary to Disappointment Creek)	9.0
Subtotal	147.0
Animas River	15.0
Ruby Creek	1.0
Elk Creek	1.5
Molas Creek	1.5
Cement Creek	4.0
Subtotal	23.0
Streams (SW portion of RMP Area)	
Cross Canyon	16.0
Hovenweep Canyon	10.0
Yellowjacket Canyon	8.0
Sandstone Canyon	9.0
Rock Canyon	5.0
Sand Canyon	3.0
Goodman Canyon	4.0
Subtotal	55.0
Total	282.5

* These estimated stream miles and riparian habitat areas are considered to have enough potential to warrant further investigation for watershed and aquatic/riparian habitat improvement.
Source: BLM Data 1984.

Table 2-13. Miles and Stream Habitat Quality in Planning Area.

Stream name	BLM miles (to nearest tenth)	Aquatic/riparian habitat condition	Species present[1/]	Pool riffle ratio (percent)[2/]	CDOW fishery values[3/]
Atkinson Creek	5	Fair	None	40:60	None
Beaver Creek	17	Fair	Rb,Ct,U	ND	Poor
Big Bear Creek	5	Fair	Bk,CT	30:70	Below average
Coyote Wash	4	Good	U	20:80	None
Disappointment Creek	22	Poor	U	10:80	ND
Elk Creek	1	Excellent	Ct	80:20	Below average
Fall Creek	7	Fair	Rb,Bk,Bn,Ct,U	70:30	Below average
La Sal Creek	12	Fair	S,D,Sc	30:70	ND
Leopard Creek	4	Fair	Rb,Bk,Ct	10:90	Excellent
Mesa Creek (South fork)	11	Fair	Rb,D,U	45:55	Below average
Naturita Creek	32	Poor	Rb,S,D	10:90	Poor
Roc Creek	4	Fair	Ct,U	40:60	ND
Saltado Creek	3	Good	Bk,U	50:50	Average
Specie Creek	2	Fair	None	70:30	None
Tabeguache Creek	15	Poor	Rb,Bn,S	ND	None
Total	144				

1/Rb=rainbow, Bn=brown, Bk=brook, Ct=cutthroat, U=unidentified species, Sc=Sculpin, S=sucker, D=Dace.
2/Assuming that higher quality streams would approach a 50:50 ratio.
3/Fishery value is not necessarily representative of potential habitat quality in terms of BLM's philosophy of habitat management as opposed to species management.
Source: BLM Data 1984.

Riparian Habitat

Riparian habitat associated with perennial and intermittent stream courses is especially important to aquatic and terrestrial wildlife species in the planning area. Riparian areas generally have the greatest potential (acre for acre) for producing vegetation and biomass of any habitat type. Many aquatic, semiaquatic and terrestrial species are dependent on the available water, the vegetation type that develops in riparian sites, or the extraordinary production and density of insects or other prey species. Most riparian sites are too small or narrow to have been mapped in the intensive soil inventory; riparian soils mapped total 6,800 acres, or approximately 1 percent of the total BLM acres in the planning area. Of those riparian soil sites classified by SCS's ecologic condition rating (see Glossary), most are in poor condition, with the remainder in fair condition.

T & E Species

Federally Listed-Endangered. Bald eagles (Haliaeetus eucocephalus) have historically nested in the region in forested areas along rivers. The impoundment of rivers and development of storage reservoirs have created additional nesting habitat. No nest sites

have been identified on public lands, but potential habitat exists in several areas (near Vallecito and Lemon reservoirs northeast of Durango and near Summit Lake, north of Mancos). One identified bald eagle nest (active in 1983; CDOW, personal commun. 1983) is within two miles of BLM land near Cortez. Three other confirmed nest sites occur within 5 to 10 miles of BLM lands near Cortez and south of Durango. Most bald eagle activity on BLM lands occurs in winter months (from November through April; see Fig. 2-4) when birds from northern states migrate into the area. Use areas were inventoried and mapped by BLM in 1979 and 1980. The largest concentration of eagles in the planning area is near the Disappointment Valley and Dry Creek Basin, where eagles exhibit opportunistic feeding behavior, taking carrion when available, and hunting rabbits and prairie dogs.

Black-footed ferrets' (Mustela nigripes) historic range included nearly all BLM lands in the San Juan Resource Area except the higher elevation lands near Silverton. Their range and potential habitat coincide with prairie dog habitat below 10,000-foot elevation. No sightings or evidences of activity have been reported in the SJRA since 1954 (in Montezuma County near Mancos). There is limited documentation on actual sighting. No intensive surveys have been conducted other than the Shell-Mapco pipeline ROW corridor surveys in 1980.

Peregrine falcons (Falco peregrinus anatum) live in the region year-round. Suitable habitat for nesting has been intensively inventoried and mapped (CDOW 1978), including sites known to have been occupied in the past, presently occupied sites, and additional sites that are suitable for expanding known habitat. At least eight such potential or known sites occur on lands that could be directly or indirectly affected by managing BLM-administered lands or subsurface minerals. Two of these three have ongoing reintroduction programs and the third is under consideration for possible reintroduction efforts (Chimney Rock, Durango, and Mesa Verde sites; Langlois, personal commun. 1983). Peregrine Falcon Recovery Team personnel (made up of various members of different Federal agencies) have indicated that long-range plans may lead to reintroductions at all potential habitat sites.

BLM is funding portions of reintroduction efforts near Durango. A total of 14 falcons have been successfully released between 1979 and 1982. At least one confirmed return of a banded peregrine was reported and numerous unconfirmed reports have been made by local ornithologists. The recovery team hopes to continue releases at this site until a wild pair becomes reestablished. A wild pair is currently established near Paradox, the CDOW is monitoring it and augmenting the natural production through nest manipulation (a series of switching maneuvers to get the birds to produce double eggs and to accept foster chicks, while wildlife biologists remove thin-shelled eggs for artificial incubation).

Peregrine populations in the region are unstable. Wild birds failed to return to one historic site at Chimney Rock in recent years, but a new pair established a nesting territory at a second site near Hermosa after a captive bird release effort attracted them.

The extreme eastern portion of the planning area and most of the Silverton area are included in the migration route of the Gray's Lake whooping crane flock (Grus americana), based on migration records (CDOW 1978) for the greater sandhill cranes (Grus canadensis tabida). The sandhill cranes are being used to foster whooping cranes in an experimental program to assist the recovery of the whooping crane species. No areas are currently designated as essential habitat in Colorado.

Spotted owls (Strix occidentalis) have been reported to occur at Mesa Verde in ponderosa pine and Douglas-fir habitat (G. Craig, CDOW, personal commun. 1983). Similar habitat sites occur on Weber and Menefee mountains, in the Dolores River Canyon, and near Durango. No inventories presently have been conducted for this species.

Both the grey wolf (Canis lupus) and grizzly bear (Ursus arctos) once occurred on the public lands in the planning area but are not presently known to exist.

State Endangered. Greater sandhill cranes once nested in the Silverton planning area in willow-lined drainages and meadows up to 9,500-foot elevation. Occupied nesting ranges have been reduced to the northwestern part of the state. No essential habitat has been designated within the planning area, but the potential exists for recolonizing suitable habitat if the greater sandhill crane subspecies expands its population in Colorado.

Wolverines (Gulo gulo) once occupied most of the densely forested mountain habitat in the state. Some animals may still occur in the Silverton area on BLM lands. No essential habitat has presently been designated.

River otters (Lutra canadensis) were known to have occurred in the Dolores and San Miguel river drainages. They require year-round open water and a minimum flow of 10 cfs and are thus limited to major waterways and lakes with an abundant fish supply. River otters have been introduced to the Piedra River by the CDOW. If the Dolores River flow is maintained at acceptable levels by releases from McPhee Dam, it would again become suitable habitat. The CDOW has done some preliminary investigations of habitat along the Dolores (Langlois, personal commun. 1983).

At one time, Lynx (Lynx canadensis) occupied nearly all alpine and subalpine forest habitat in Colorado. Parts of Eagle County and Clear Creek County are thought to be presently occupied range. The areas around Silverton are potential habitat for the species.

Livestock Management

The planning area contains 227 grazing allotments. They cover approximately 937,000 acres of public land, with 176 permittees currently licensed to graze livestock. Approximately 57,000 acres in the planning area are currently unallotted. (See Appendix 9-H and map at back of RMP.) Nine grazing allotments were previously covered in the Gunnison Basin-American Flats/Silverton Grazing EIS (1982).

The current active grazing preference in the area is 64,267 AUMs. By kinds of livestock, the preference is licensed as follows: cattle, 83 percent; sheep, 16 percent; and horses, 1 percent. The cattle and sheep permittees are primarily cow-calf and ewe-lamb operations, respectively. Eleven allotments covering 304,400 acres are currently under AMPs. Several of the existing AMPs still require substantial range improvements before they will be fully implemented.

Throughout any given year, licensed livestock can be found on public lands within the planning area. The majority of grazing is either spring, fall or winter use. Approximately 20 percent of all permittees also hold USFS grazing permits with most grazing on forest allotments in the summer directly from their BLM allotments.

Wild Horses

Wild horses are found in two locations in the San Juan-San Miguel planning area: Naturita Ridge south of Naturita and in the southeast end of Disappointment Valley in Spring Creek Basin (see Fig. 2-5 and Table 2-14).

Naturita Ridge Herd

The herd area is predominantly on public lands. Both forage productivity and the availability of water are currently being met predominantly on public lands. There appears to be a potential for competition for forage between wild horses, elk, and domestic livestock (primarily sheep), based on dietary studies, vegetation condition and trend, and population trends. Forage conditions presently appear to be satisfactory under current horse numbers.

Table 2-14. Wild Horse Herd Areas Within Planning Area.

	Acres			
	Public lands	(private)	State	Total
Naturita Ridge	9,270	300	30	9,600
Spring Creek Basin	27,000	7,000	1,500	35,500

Source: BLM Data 1984.

Populations

Table 2-15 was derived from aerial counts of the areas occupied by wild horses:

Table 2-15. Population Trend of Wild Horse Herd.

	Estimated numbers		Average increase
	1971	1982	(%/yr)
Naturita Ridge	8	17	5
Spring Creek Basin	24	105	6.5

Source: BLM Data 1984.

Spring Creek Herd

The herd has steadily increased since 1971 because there has been no significant natural predation. A potential for competition for forage exists because of dietary overlap among wild horses, wildlife, and domestic livestock. Wild horses use intermingled private lands within the herd area for forage and available water. Overall poor vegetation conditions characterize this herd area.

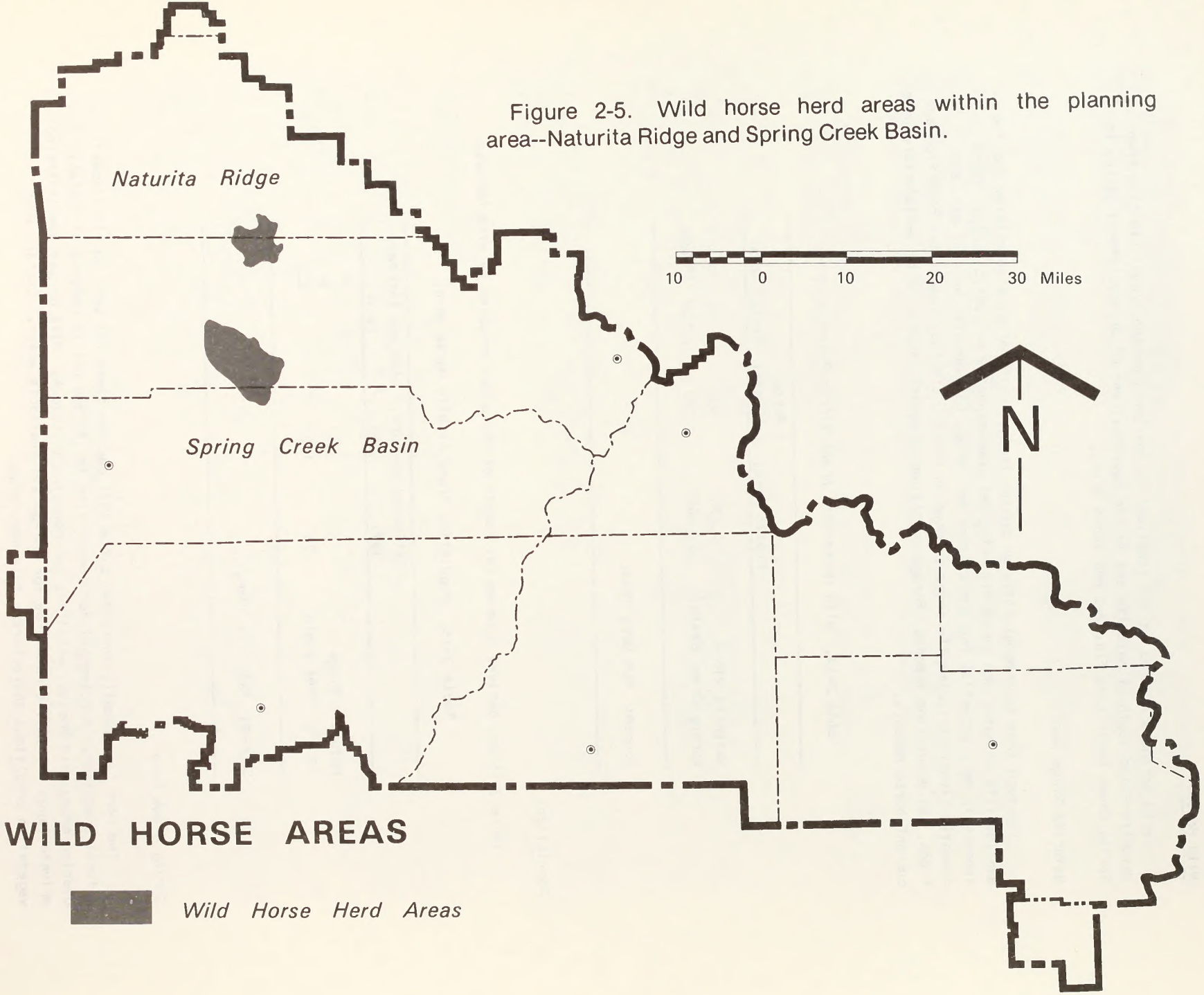


Figure 2-5. Wild horse herd areas within the planning area--Naturita Ridge and Spring Creek Basin.

Timber Resources

Commercial Forest Land

The planning area contains 44,200 acres of commercial forest base with the predominant commercial species being ponderosa pine, Engelmann spruce, and Douglas-fir (see Fig. 2-6).

In the early 1970s, all commercial forest lands in the San Juan-San Miguel planning area were extensively inventoried and classified according to silviculture and technical criteria and environmental and multiple use restrictions. Based on these inventories, it was estimated that 9,540 acres or 22 percent of all the commercial forest base within the planning area is available for timber production. The remaining 34,660 acres is considered nonsuitable because of extreme topography, fragile soils, and recreational withdrawals.

The planning area could sustain an annual allowable cut of 560 thousand board feet (MBF), depending on restrictions, if funding and manpower were available, which represents less than 1 percent of the sawtimber produced in the immediate area.

Woodland Products

Based on recently collected data, woodland species presently occupy approximately 600,000 acres of the San Juan-San Miguel planning area. These inventories suggest that approximately 67,000 acres of the woodland forests could be classified as productive, operable and capable of being intensively managed. Under current management, no woodland acres are identified as being under intensive management. Most woodland activities have been implemented with an objective to improve range conditions. The demand for woodland products within the planning area has been estimated at 1,000 cords of fuelwood and 3,000 posts annually.

Recreation

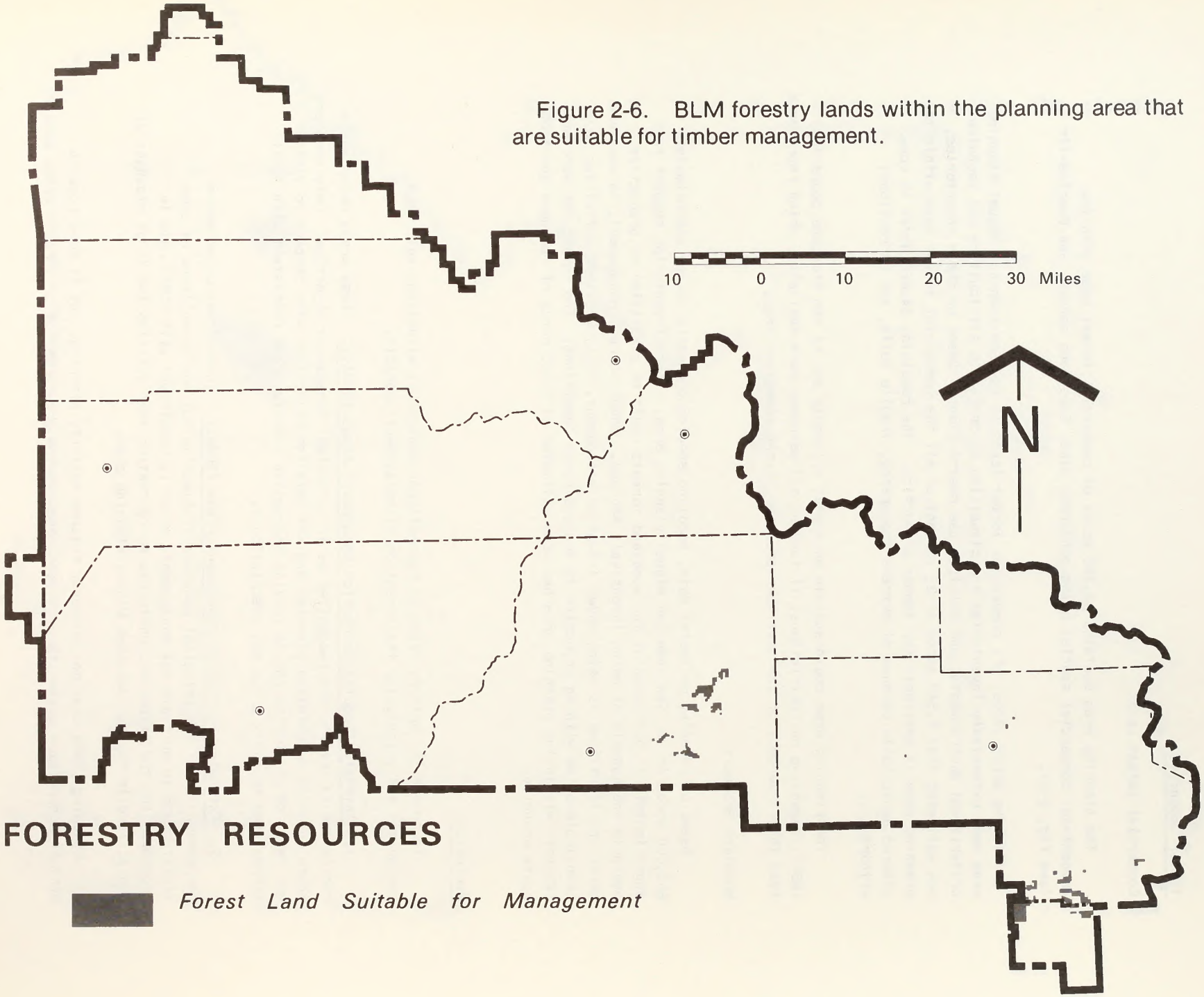
There are two primary types of recreational management situations which BLM recognizes and which guide the direction of management emphasis.

1. Intensive/Special Recreation Management Areas (SRMAs). These areas occur where recreation is defined and recognized as the principal management objective. Only here are there needs to do detailed planning and set detailed objectives with respect to visitor and resource protection and to provide recreation opportunities consistent with public wishes (see Appendix 3 for ROS descriptions).

2. Extensive Recreation Management Areas (ERMAs). These areas occur where recreation is not the principal management objective but may be an issue of some significance in multiple use management, which is consistent with BLM's role in accommodating the dispersed, unstructured recreation that typifies the large expanses of public land in the San Juan-San Miguel planning area.

Managing ERMAs does not normally require activity planning, but it does require minimal supervision either through occasional on-the-ground patrol or through using maps,

Figure 2-6. BLM forestry lands within the planning area that are suitable for timber management.



brochures, and signs. Within the planning area, there are two special SRMAs: the Dolores River Canyon and the Silverton (see Fig. 2-7). The remainder of the RMP area is categorized as an ERMA.

The Dolores River Canyon SRMA

The Dolores River, from McPhee Dam to Bedrock (104 miles) has become one of the more popular boating rivers in the Southwest. The Dolores River SRMA provides recreation opportunities, activities, and settings that are unique for BLM-administered lands in the region. Although the Dolores River only provides boatable flows from the end of April to mid-June of most years, some 12,500 annual visitor days may occur during that period.

McPhee Dam will create a change in recreation opportunities that have been historically available on the Dolores River. The Definite Plan Report and Environmental Statement prepared by the Bureau of Reclamation for the Dolores Project incorporated downstream recreation benefits that would accrue from constructing McPhee Dam. In the subject reports, the Bureau of Reclamation agreed to construct eight recreation sites (see Table 2-16) below McPhee Dam and to schedule and control flow releases to accommodate whitewater boating. Four of the proposed sites would be located on lands administered by the USFS, from McPhee to the Bradfield Bridge; four sites will be on lands administered by BLM, from Bradfield Bridge to Bedrock.

The USFS has prepared a Recreation Area Management Plan for the McPhee Dam-Bradfield Bridge segment of the river to include the design scheduling of their sites, which will be constructed by the Bureau of Reclamation as part of the dam construction contract. There are currently no public developed sites along the 105-mile reach of the river, which provides 2- to 3-day float trips from Cahone to Slick Rock or 5-day trips from Cahone to Bedrock. Float boating is expected during 1984 through 1986 on a limited basis because of filling McPhee Dam. Because of uncertainties associated with the river, both in terms of its unpredictable and sometimes nonexistent natural flows and the untested operation of flow releases from the dam, no permit system has yet been established on the river; however, a permit system is planned for 1984.

The entire Dolores River, from below McPhee Dam to one mile above Bedrock, was recommended for inclusion into the Wild and Scenic Rivers System in 1976; a study report and EIS were submitted to the President, as directed by the Wild and Scenic River Act (as amended, PL 93-621, January 3, 1975). On several occasions the President recommended inclusion to Congress. However, Congress never took any designation action and the withdrawal associated with the river corridor, specified in the Wild and Scenic Rivers Act, expired in September 1981.

The Silverton SRMA

The Silverton SRMA encompasses the southern portion of the larger American Flats/Silverton SRMA (divided between BLM's Gunnison Basin and San Juan resource areas). It is unique because it provides a full range of recreation setting opportunities (from primitive to urban), with an equally wide distribution and public availability for activities such as wilderness recreation, jeeping, mountain climbing, backpacking, cross country skiing, historic and geologic interpretation, fishing, hunting, and scenic viewing on an area unparalleled in all of BLM's public lands. The area occurs in a high altitude environment (9,000 ft to 14,000 ft) exhibiting a unique and highly accessible alpine ecosystem in the heart of the San Juan Mountains.

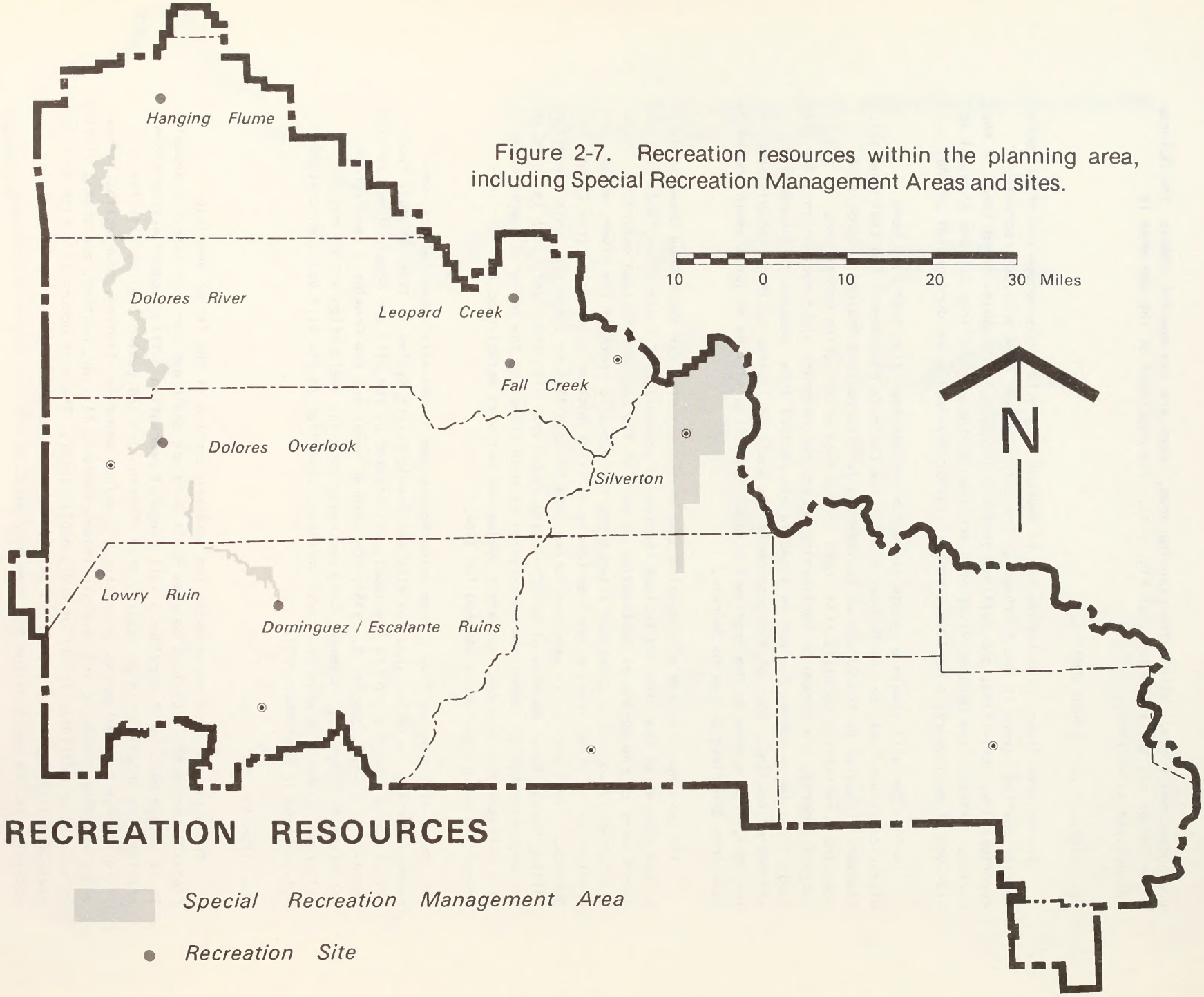


Figure 2-7. Recreation resources within the planning area, including Special Recreation Management Areas and sites.

Table 2-16. Proposed Recreation Sites for the Dolores River.

Proposed recreation site (administering agency)	Planned facilities
Bedrock (BLM)	Toilets, water, picnic area, parking, boat launching ramp.
Cabin Canyon (USFS)	Toilets, water, parking.
Ferris Canyon (USFS)	Toilets, water, parking, launching beach.
Little Gypsum Valley (BLM)	Toilets, water, picnic area, parking, boat launching ramp.
McPhee Dam (USFS)	Camp area, toilets, water, parking, boat launching ramp.
Mountain Sheep Point (BLM)	Campsites (22), toilets, water, picnic area, parking, boat launching ramp.
Ryman Draw (USFS)	Camp area, toilets, water, parking, boat launching ramp.
Slick Rock (BLM)	Toilets, water, picnic area, parking, boat launching ramp.

Source: BLM Data 1984.

The SRMA provides superb road accessibility, resulting from historic mining activity. These roads provide semiprimitive motorized and roaded-natural jeeping opportunities that produce approximately 437,000 annual visitor days. The area is one of the more accessible mountain environments in Colorado, featuring an attractive blend of recreation opportunity settings with a myriad of jeep roads, hiking trails, and climbs to several 13,000-foot mountain peaks.

There are no BLM developed recreation facilities within the SRMA and the informational signing program is difficult to maintain. The entire area has been designated according to BLM's ORV regulations (Gunnison Basin and the American Flats/Silverton ORV Plan 1981).

ERMAs

The remainder of the planning area provides dispersed, unstructured recreation use and opportunities. Within the ERMAs, BLM has three sites used by the public (see Table 2-17). The Rare Snake and Lizard Research Natural Area occurs within the ERMA.

Since February of 1965, this natural area has been recognized, although with varying degrees of management emphasis, as having research values. Intermittent research, primarily by local and regional educational institutions, has occurred here for several years. Evidence exists that similar research efforts will continue.

Table 2-17. ERMAs in San Juan-San Miguel Planning Area.

Site name	Investments ($)	Features	Estimated use (visitors/yr; 1983 figures)
Dolores Overlook	35,000	Picnicking, toilet, tables.	300
Dominguez-Escalante Ruins	200,000	Picnicking, archaeologic stabilization and interpretation, portable toilets, tables.	6,000
Lowry Ruin	250,000	Picnicking, archaeologic stabilization and interpretation, vault toilets, tables.	3,000

Source: BLM Data 1984.
Note: There are other sites which receive heavy use but are not developed (such as the San Miguel River). One is in the process of being acquired by the town of Placerville under the R & PP Act for development of urban recreation (playfield, fishing pond, bathrooms, picnic, volleyball, horseshoes, and day care center for kids). Leopard and Fall Creek sites have cabanas/ramada shelters and fire pits only.

Cultural Resources

Prehistoric Period

Human groups have used or inhabited the planning area during the past 10,000 to 12,000 years. They are characterized by Paleo-Indian hunters of big game; Archaic small-game hunters and gatherers; and Formative, sedentary agriculturalists, and protohistoric hunters and gatherers.

Paleo-Indian Period (B.C. 12,000 - B.C. 7500). This period represents the initial occupation of North America by big-game hunters. Lasting from 12,000 to 7,500 years ago, evidence for Paleo-Indian use of the Four Corners region is scant. Isolated or early projectile points found on multicomponent, lithic scatters have been discovered that can be attributed to this period, but no positive Paleo-Indian sites are known on public lands in the planning area. Current speculation is that the area was used on a sporadic basis by mobile groups from surrounding desert and plains regions.

Archaic Period (B.C. 7500 - A.D. 450). Hunters and gatherers successfully adapted to modern (or post-Pleistocene) environmental conditions. Their wide-ranging occupation comprises the Archaic Period. Plant resources such as pinyon nuts, berries, seeds, acorns, roots, and tubers made up the diet supplemented with small game and rodent meat resources. Their lifestyle consisted of seasonally pursuing these resources as they became available.

Camp sites and resource procurement and processing sites most commonly represent this period; both types are documented in the planning area, mainly through surface investigations. Data concerning subsistence patterns and lifestyles are based mainly on extrapolation from the Great Basin area (parts of Nevada, Utah, California, Oregon, and Idaho) where Archaic Period sites are often the focus of archaeologic research.

Formative Period (A.D. 450 - A.D. 1300). The Formative Period was characterized by people agriculturally producing primary foodstuffs and occupying villages year-round. In the planning area, the Formative Period is synonymous with the spectacular Anasazi occupation of the southern portion and the less spectacular Fremont occupation of the far northern portion of the area.

The Anasazi occupied much of the Colorado Plateau region from approximately A.D. 450 to around A.D. 1300, but their remains in the planning area represent one of their most dramatic accomplishments. The earlier Anasazi villages consisted of pit house dwellings with small surface rooms and work areas. The later Anasazi lived in aboveground pueblos and eventually moved into cliff-dwelling pueblos prior to abandoning the area.

Much work has been done in and publicized about Mesa Verde National Park; the spectacular cliff dwellings there attract both tourists and researchers. However, the Anasazi of Mesa Verde may well have been considered a rural development compared to the cultural development that took place to the west in the Montezuma Valley and on public lands in the planning area.

The northern portion was apparently on the eastern frontier of the San Raphael Fremont area of eastern Utah. Stone structures were used for habitation and the means of supporting life were partially dependent on horticulture. Most likely, these sites possibly represent local hunters' and gatherers' efforts to imitate Anasazi and Fremont developments to the south and west.

Protohistoric Period

Occupation of the planning area during the several hundred years before the colonial and subsequent European settlement was intermittent and seasonal. Ute hunters and gatherers were the primary land users. Their occupation is evidenced by extensive tool production areas, hunting camps, and processing areas.

Historic Period

The Historic Period began in the planning area when the Spanish explorers arrived here in the 18th Century. The Escalante-Dominguez Expedition of 1776 is the best known of the explorations. Euro-Americans first permanently occupied here in the late 1800s while searching for and developing the area's vast mineral resources. The Silverton area's mining boom took off in the mid-1870s and ushered the era of mineral and railroad

development that lasted into the 20th Century. Agriculture and ranching started slowly in support of the mining camp needs. The removal of the Utes in 1881 hastened the diversification of these industries by attracting ranchers and farmers to unoccupied, fertile lands.

Supply sources related to the Historic Period included mining camps and millsites; tramways; trails; railroad and irrigation apparatus; homesteads; sheep, logging, and cow camps; spring developments; and trash dumps. Mining, ranching, and agriculture continued to dominate the Historic Period until the present.

Cultural Inventories

Approximately 178,000 acres of public land have been intensively inventoried (or approx. 18% of total planning area). More than 4,800 sites have been recorded on these lands, yielding an overall average of approximately 17 sites per square mile. The density of sites varies tremendously, however, in relation to geographic factors. One large inventory on Mockingbird Mesa resulted in more than 100 sites recorded per square mile, while other areas characterized by lower elevation shrublands or higher elevation slopes have yielded only a few sites per square mile. Some of the larger inventory projects include Class II sample inventories of the old Sacred Mountain planning area and the San Miguel planning area, Class III inventories of portions of the Durango-Chromo areas, portions of Spring Creek Mesa, the Nucla coal area, and Mockingbird Mesa and scattered Class III inventories (see Glossary) along the Dolores and San Miguel River bottoms.

Of the 4,800 recorded sites, only two (Lowry and Dominguez-Escalante ruins) are presently on the National Register of Historic Places (NRHP). However, the majority of the remaining sites are considered potentially eligible for NRHP inclusion or require additional data for evaluating their importance.

The various cultural resources exhibit their importance in various ways and in different degrees; they are highly valuable scientifically and aesthetically. Most of the sites representing varied aspects of the Anasazi lie in the Sacred Mountain area (primarily Montezuma and Dolores counties). They are considered both individually and collectively unique and nationally important, representing a successful and challenging adaptation to marginal environments that lasted for 800 years.

Many of the sites in San Miguel and Montrose counties are also of significant scientific value, although not as visible and structural as the Anasazi resources. Many of the sites in this area evidence activities of Archaic-type hunters and gatherers, and while these remains are scientifically valuable, they are considered less unique as BLM manages thousands of similar sites throughout the 11 Western States region. Additionally, they are not as evident or easily developed; therefore, they have less potential for public recreation interest. The most important sites in the northern portion of the planning area are those more or less unique sites associated with an early period of agriculture in its initial stages and those sites associated with the Fremont Period.

Another type of important cultural resource in the area is related to the historic mining period in the Silverton and Uravan-Naturita areas. Although many historically important resources are on patented land, some of these resources exist on public land, although they are largely undocumented. The Silverton area sites are related to early mining of precious minerals, while the Uravan-Naturita area is the focus of some of the earliest uranium mining in the United States.

REFUGE HOUSE WAS BUILT PRIMARILY FOR DEFENSE, WITH A HABITATION SITE LOCATED BELOW THE CLIFF STRUCTURE (SAND CANYON CULTURAL EMPHASIS AREA).

Important Cultural Sites or Areas

Based on present data, the following sites or areas (see Fig. 2-8) are considered to be of probable national importance and represent cultural resource values within the planning area (BLM Data 1984).

1. Sand/East Rock canyons (5,880 acres). Sand and East Rock canyons lie in Montezuma County and contain a large number of late Anasazi cliff dwellings that are in a good state of preservation and are unique to the planning area. Combined with the area's recreation potential, this creates an opportunity that requires special management considerations. At the head of Sand Canyon is one of the largest and best preserved Anasazi pueblo ruins in Montezuma County (Site 5 MT 765).

2. Cannonball Ruin (80 acres). Administratively withdrawn and surrounded by an 8-foot high chain link fence, this large canyon head ruin on Cannonball Mesa was recorded in 1907 by Sylvannus Morley and A. V. Kidder (who became well-known, well-published archaeologists) and was partially excavated in 1908. It presently represents the only large canyon head complex ever professionally investigated. While much scientific value remains to the site, it also has potential for public interpretation.

3. Mockingbird Mesa (5,327 acres). Approximately 90 percent of this mesa has been intensively inventoried, with a resulting site density of approximately 100 sites per square mile (an extremely high site density area). The mesa represents prime Anasazi habitat; it was intensively occupied from approximately A.D. 600 to A.D. 1300. It exhibits a wide range of occupation and resource procurement sites that are in fairly good condition, scientifically valuable, and visually spectacular. Mockingbird Mesa is not currently protected by administrative withdrawal and has been the site of considerable CO_2 development.

While Mockingbird Mesa is the only large mesa top area to be intensively inventoried, other similar settings (i.e., mesa top, deep eolian soils, 6,000-ft to 7,000-ft elevations) in Montezuma and Dolores counties will probably reveal a similarly intense Anasazi occupation. Other mesas where limited inventories have tended to confirm this prediction are Cow, Woods, and Cajon mesas and Squaw and Burro points.

4. Lowry Ruin (80 acres). This site is important in terms of its past contributions to the area's prehistory as well as its potential for public interpretation. Originally excavated in the 1930s by Paul S. Martin (one of the Southwest's foremost archaeologists), it has been reopened and stabilized by BLM and is currently a popular developed recreation site, protected by administrative withdrawal. Its scientific contribution lies largely in its representation of the intrusive Chaco influence that affected the 12th Century Anasazi of the area.

5. Dominguez-Escalante Ruins (40 acres). These sites near Dolores are also related to the Chaco Phenomenon and have been partially excavated and stabilized (currently a prime element in BLM's maintenance stabilization program for the area). Escalante Ruin was observed and noted by Father Escalante in 1776, making it the first documented archaeologic site in Colorado. These sites, protected by administrative withdrawal and developed as recreation sites, will provide a portion of the interpretive program at the Anasazi Heritage Center.

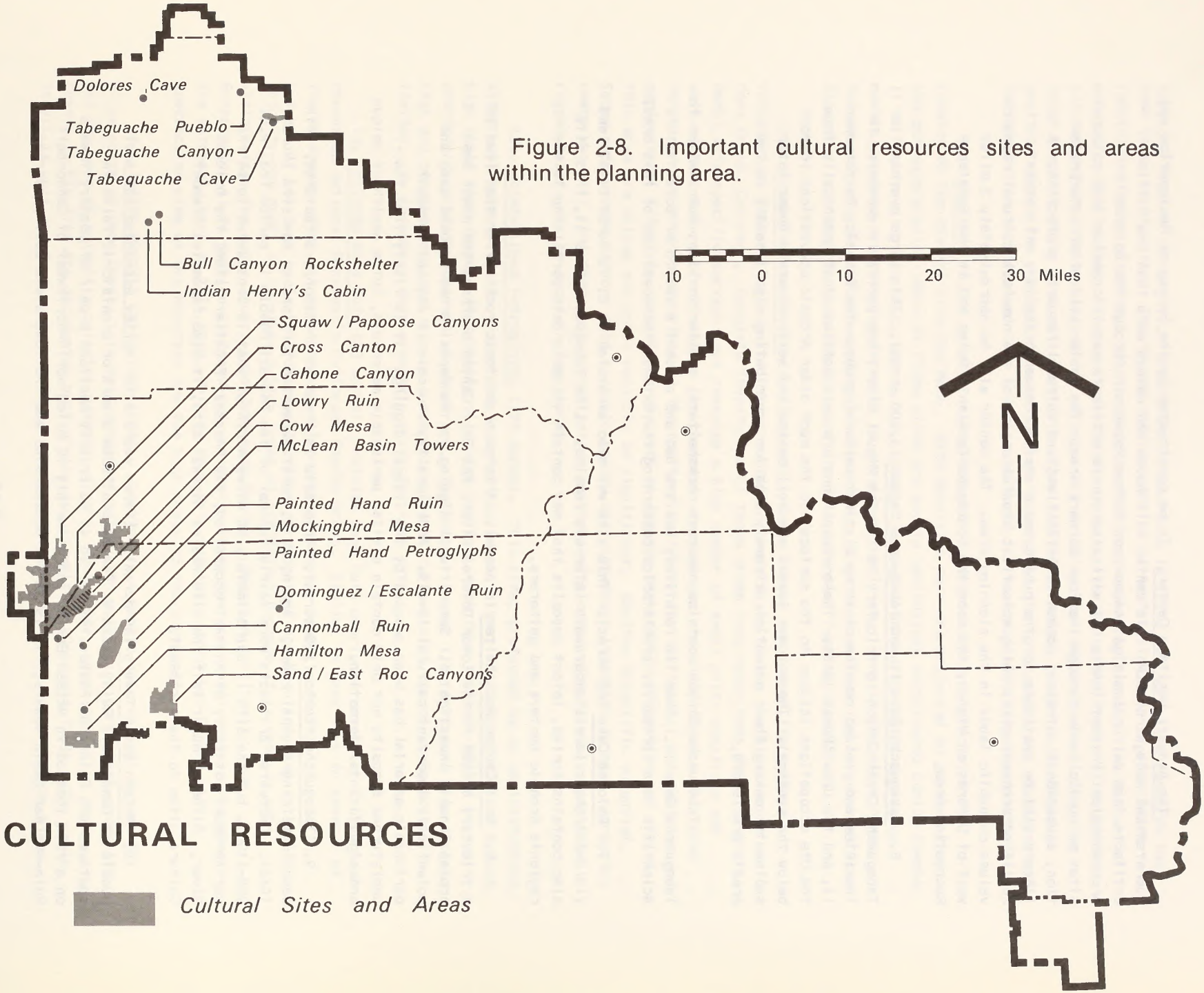


Figure 2-8. Important cultural resources sites and areas within the planning area.

The Anasazi Heritage Center. To be constructed by the Bureau of Reclamation and operated and managed by BLM, this center will house and manage more than one million artifacts from cultural mitigation work on McPhee Reservoir through the Dolores Archaeological Project (DAP). It will also curate artifacts and information from cultural sites on public lands through the Four Corners area. The center will offer interpretation, educational outreach, community activities, and cultural resource protection. A library will be available for the public and a staffed research facility will assist qualified archaeologists doing scientific studies on any of the numerous cultural resource values on public lands in the planning area. The center will be approximately 2 miles west of Dolores on Highway 184 near the Dominguez-Escalante Ruins and in the Escalante Recreation Area.

6. Tabeguache Cave II and Tabeguache Canyon (3,100 acres). This large overhang in Tabeguache Creek Canyon (a tributary to the San Miguel River) was partially excavated in the 1930s and yielded remains of three distinct cultural groups--the Archaic, Basketmaker II, and the Utes (Hurst 1945). These occupations are well defined stratigraphically from the Ute occupations (closer to the surface) to the much older Archaic occupations (deeper below the surface). These lower levels are well sealed and well preserved under later sediments, making their potential extremely high for contributing significantly to the area's prehistory.

Tabeguache Canyon contains numerous rockshelters, smaller in size, but similar to Tabeguache Cave II. They lie relatively undisturbed and present a wealth of potential scientific data (primarily prehistoric) concerning the extended seasonal use of this area.

7. Dolores Cave (60 acres). This site was also excavated by C. T. Hurst (1947) and yielded Archaic levels underneath later Ute remains. Like Tabeguache Cave II, this site also contains buried, intact deposits that may contain valuable data pertaining to the region's Archaic hunters and gatherers.

8. Bull Canyon Rockshelter (5 acres). A large prehistoric rockshelter that lies in a tributary canyon to the Lower Dolores River, the Bull Canyon overhang has never been professionally investigated. Some illegal digging in the deposits has exposed deep and potentially important cultural levels. Additionally, the cave is dry and abundant perishable material has been exposed by the illegal digging. It is likely that the undisturbed deposits not only contain similar perishable materials, but a wealth of unique and significant information.

9. Tabeguache Pueblo (120 acres). This site is a series of masonry structures, with each containing several rooms. Again, C. T. Hurst excavated portions of the site (Hurst 1946). Recovered artifacts were fairly typical of the Anasazi Pueblo II period (ca. A.D. 900-1100), but the site is approximately 60 miles north of what is considered to be the northernmost periphery of Anasazi occupation, the "Anasazi Frontier" along the Dolores River. Although Hurst felt the site was an Anasazi site, it also resembles Fremont Culture sites to the northwest.

10. McLean Basin Towers (80 acres). Eleven years after Morley excavated the south pueblo at Cannonball Ruin, Jesse W. Fewkes published a work on prehistoric ruins in southwestern Colorado (Fewkes 1919). In it he briefly mentions a pair of masonry towers on a ruin located in McLean Basin, approximately 10 miles north-northwest of Cannonball Ruin--McLean Basin Towers. It is as yet unexcavated and the towers are well-preserved

(approx. 11.5 ft in height). Stabilization was done in 1977, but no active research has ever begun on the site. The towers and the remains of rectangular masonry structures (administratively withdrawn) have been preserved from vandals by a chain link fence erected by BLM in 1965. The surface remains of this site indicate a Pueblo II to Pueblo III occupation with possibly a row of one-story buildings and subterranean kivas. The tower complex, which lies well away from other habitation areas, may be a strategic position within the communication network of "towers" in the Hovenweep area. Research and interpretation potential at this pristine site and in the associated area are enormous.

11. Cow Mesa (3,079 acres). Lying between two deep canyons covered with the remains of the Anasazi lies Cow Mesa. Site densities here are projected to be more than 100 per square mile. Many of these sites are pueblo habitations constructed during Pueblo II to Pueblo III times (A.D. 900 to A.D. 1250). Several prehistoric fields and water control systems are reported to exist in excellent condition. Many of the sites here possess structural features unobserved elsewhere. No intensive Class III inventories (see Glossary) have been done on Cow Mesa and its full potential remains unexplored.

12. Squaw/Papoose Canyon (4,611 acres). Squaw Canyon and one of its primary tributaries, Papoose Canyon, lie near the Utah/Colorado State line a few miles south of Dove Creek, Colorado. Complete inventories of these areas have never been done; however, small site-specific surveys have revealed a high number of small cliff dwellings and well-hidden masonry structures in the canyons' steep slopes and cliff faces. This area verges on the ecozone described as the northern periphery for the Anasazi and their agricultural lifestyle, explaining why such an intense prehistoric occupation and use of this area are unique and could possibly be significant. Besides scientific potential, Squaw and Papoose canyons hold a scenic beauty and ruggedness important to many recreation users who will find that such a combination of archaeologic and educational values and rugged beauty can be found in few places.

13. Painted Hand Petroglyphs (120 acres). This site, protected by an administrative withdrawal because of its unique and important cultural values, is surrounded by an 8-foot high chain link fence. It consists of a high vertical rock face that was etched by prehistoric artists hundreds of years ago. The rock art panel itself is more than 10 feet high and 50 feet long and lies in a remote region of Yellowjacket Canyon where access is limited. No inventory data presently exist for this site.

14. Painted Hand Ruin (80 acres). Painted Hand Ruin overlooks Hovenweep Canyon near Hovenweep National Monument's Cutthroat Castle Group. Similar in many ways to several of the Hovenweep sites, it possesses a well-preserved masonry tower, more than 15 feet in height. It has been evaluated for stabilization purposes and has been targeted as having a priority-one need. It receives a high level of visitation because it is near to and visible from the major access into Cutthroat Castle. Occupied continually from Basketmaker II to Pueblo III times and possessing three "painted hand" pictographs that are extremely rare to this area, Painted Hand Ruin overlooks Hovenweep Canyon with a spectacular view of Ute Mountain and the high mesas to the southeast.

15. Indian Henry's Cabin (160 acres). Located in a remote area of Bull Canyon 30 miles north of Dove Creek, this well-preserved cabin with associated corral and gravesite was the home of a locally colorful historic figure, Henry Huff, known as Indian Henry. Events in his life are documented both orally and in writing (Copeland 1980). The cabin itself is well built of ponderosa logs, rare for the area but still found high on a few

north-facing slopes. Much mystery and local legend surround Henry's occupation here from 1890 to 1917.

16. Hamilton Mesa (5,018 acres). Hamilton Mesa stretches for several miles along the south side of McElmo Creek, terminating just before the creek enters Utah. This area is a very marginal desert environment with a treeless appearance. The grassy mesa top of Hamilton Mesa and accompanying rincons of its drainages harbor a remarkable number and variety of Anasazi habitations, most of which are linked to extensive and intricate water control structures. These sites range in age from A.D. 700 to A.D. 1250. Another unique feature of the Hamilton Mesa cultural area lies in the large number of Archaic sites recorded here (B.C. 8000 to A.D. 450). No intensive surveys have been completed for this area; however, information supporting its significance comes from numerous small oil and gas and seismic surveys.

17. Cross/Cahone canyons (20,774 acres). Cross Canyon and one of its major tributaries, Cahone Canyon, are still largely unexplored and uninventoried. Small surveys and linear inventories spanning the area reveal a high archaeologic site density. Also unique to these canyons (because of their ruggedness and remoteness) are the large number of historic Indian and European sites. Numerous outlaw and sheep camps, Navajo habitations, and old homesteads can be found along the canyon bottoms and steep slopes. Anasazi cliff dwellings, great kivas, towers, and water control devices are numerous and isolated from access. The interpretive and scientific potential of these canyons is as yet untapped.

Paleontology

A study (entitled Fossil Vertebrates, Invertebrates, and Plants of the Uravan Area 1982) covered a total of 70,600 acres within the planning area. These areas centered around Uravan and included the nearby canyons and mesas of the Uravan mineral belt and Paradox Valley. The results indicated that the Morrison and Chinle formations were considered important. The Morrison Formation was found to contain eight known vertebrate localities--one was a specimen of the dinosaur Dryosaurus altus and three of the other areas contained quarryable dinosaur remains.

Another work (entitled Paleontological Inventory and Assessment of the Durango and Cortez Known Recoverable Coal Resource Areas) was completed in 1981. Results indicated that, with the exception of late Quaternary alluvium, all of the formations are known to be fossil bearing. However, only the San Jose Formation is designated as having high potential.

The flowering plant Sanmiguelia lewisii (a palm or palmlike plant, the earliest known megascopic remains of a flowering plant in the world) is found within the Dolores Formation of Triassic age (165 m.y. ago) on both sides of the San Miguel River from Saw Pit, Colorado, to approximately five miles above Placerville, Colorado, and also along both sides of Leopard Creek two miles upstream from its junction with the San Miguel River.

Although Sanmiguelia lewisii was nominated for Federal status in 1968, it was denied by the U.S. Park Service Historic Landmark Board. In 1980, the genus Sanmiguelia was again nominated for Historic Landmark status and was subsequently denied but the Landmark Board recommended that the site area be considered "sensitive" to public or private use.

Visual Resources

Visual resources in the San Juan-San Miguel RMP area include some of the most diverse and spectacular scenery in the Montrose District. Approximately 96,000 acres of land were found to be important landscape areas (see Fig. 2-9), most of which were located in the Silverton area, the Dolores River Canyon and along the San Miguel River. General landscape types include broad to narrow river valleys, steep canyons, mesas, rolling parks, mountains and ridges. Vegetation ranges from desert shrub, desert woodland, mountain shrub and conifer woodland to alpine tundra.

Wilderness

Colorado's BLM Wilderness Inventory (BLM December 1980) identified eight WSAs within the San Juan-San Miguel planning area (see Table 2-18). The total acreage for all the WSAs (approx. 103,000) constitutes almost 10 percent of the San Juan-San Miguel planning area (see Fig. 2-10). A Wilderness Technical Supplement, developed with the Draft San Juan/San Miguel RMP/EIS, discusses in more detail each WSA and their alternatives and individual resources.

Table 2-18. WSAs Within Planning Area.

WSAs (inventory no.)	Size (acres)1/	Counties2/
Cahone Canyon (CO-030-265D)	9,040	Montezuma
Cross Canyon (CO-030-265; UT-060-229)	12,742	Montezuma and Dolores, CO; San Juan, UT
Dolores River Canyon (CO-030-290)	28,630	Montrose
McKenna Peak (CO-030-286)	19,562	San Miguel and Dolores
Menefee Mountain (CO-030-251)	7,129	Montezuma
Squaw/Papoose Canyon (CO-030-265A; UT-060-227)	11,287	Dolores, CO; San Juan, UT
Tabeguache Creek (CO-030-300)	7,908	Montrose
Weber Mountain (CO-030-252)	6,303	Montezuma
Total	102,601	

1/Adjusted 1980 BLM Intensive Wilderness Inventory acreages.
2/All counties in Colorado unless otherwise indicated.
Source: BLM Data 1984.

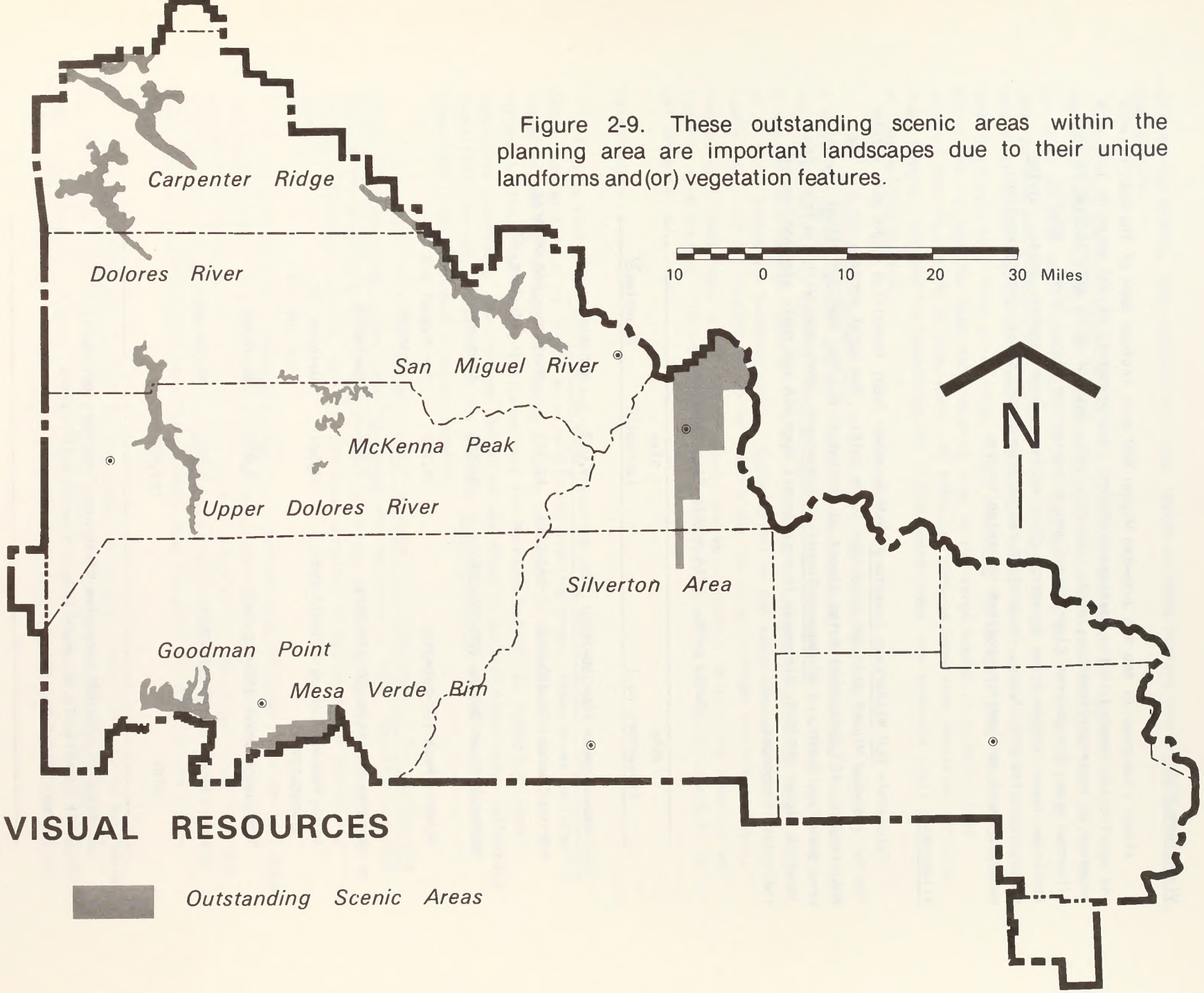


Figure 2-9. These outstanding scenic areas within the planning area are important landscapes due to their unique landforms and(or) vegetation features.

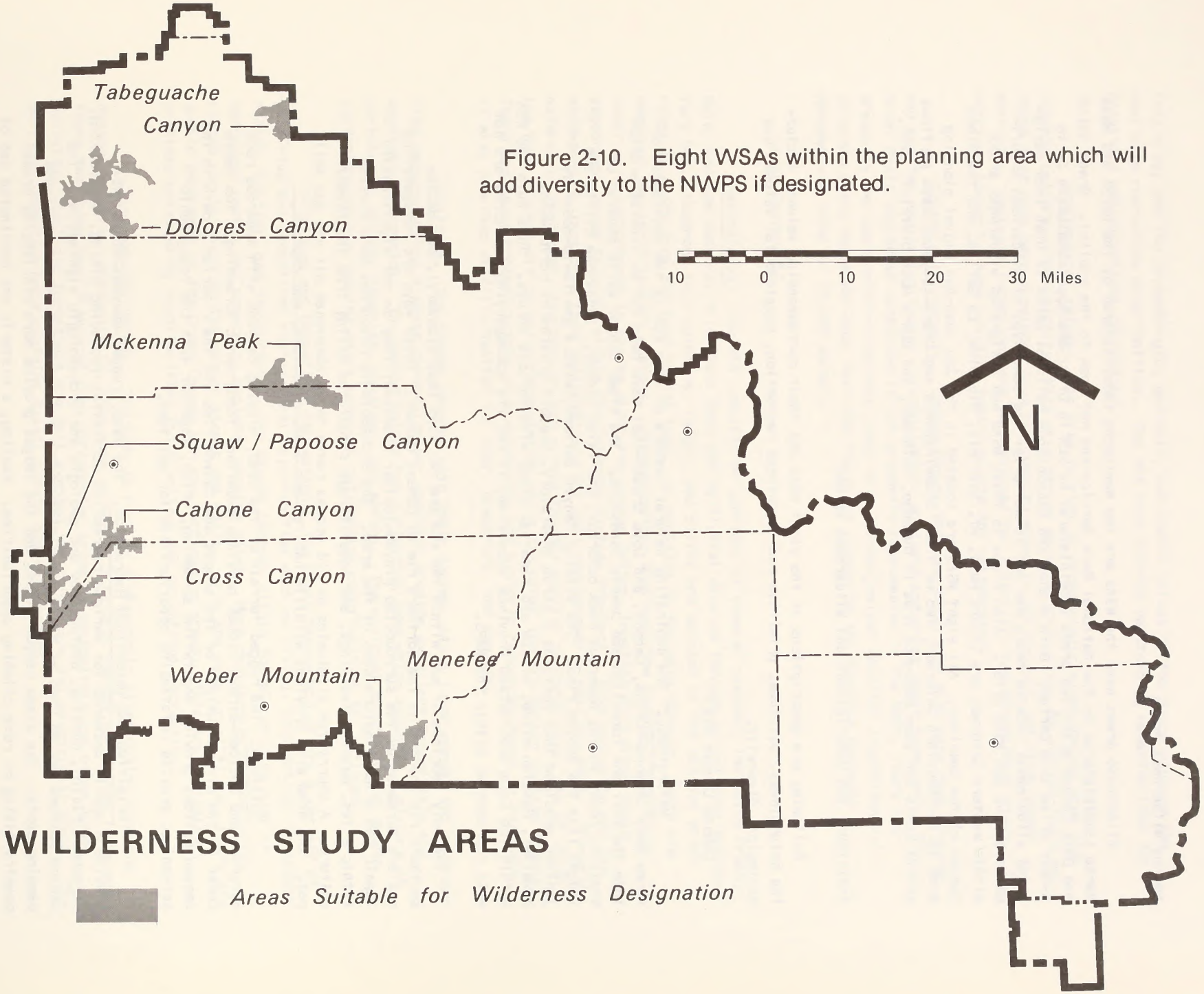


Figure 2-10. Eight WSAs within the planning area which will add diversity to the NWPS if designated.

Nearby Wilderness Areas

Wilderness areas near the WSAs are the Weminuche (administered by the USFS) and Mesa Verde (administered by the National Park Service and not open to the public). Grand Gulch and Dark Canyon primitive areas (administered by BLM in Utah) are approximately a 2- to 3-hour drive from Cortez. Both Arches and Canyonlands national parks in Utah (not designated wilderness) receive heavy use but do not offer the same type of wilderness experiences as the BLM WSAs offer. Also close to these WSAs and designated wilderness areas within western Colorado are Lizard Head, Mt. Sneffels, Big Blue, La Garita, and the Black Canyon of the Gunnison. All eight WSAs are located in the San Juan-San Miguel planning area in southwestern Colorado; two of them, Squaw/Papoose and Cross canyons, have portions within BLM's San Juan Resource Area in Durango, Colorado, and BLM's Moab District, Utah.

Individual WSA Descriptions and Wilderness Values

Following are descriptions of the eight WSAs and their corresponding values, including naturalness, solitude, primitive and unconfined recreation, supplemental values, and ecological diversity.

Cahone Canyon WSA

Naturalness. The dominating natural feature of this WSA is the confluence of three deep canyons--Cross, Cahone, and Dove Creek--that have been cut by fluvial erosion into the Morrison Formation and Dakota Sandstone. The steep canyon walls consist of shallow, rocky soils; numerous rock outcrops; and talus slopes. Sandstone cliffs and ledges line the canyon rims. The winding canyon bottoms, with a gentle-to-moderate juniper woodland that contains a shrub understory, support growths of cottonwood, boxelder, Russian olive, willow and tamarisk along with various shrubs. This puts the WSA within the Colorado Plateau Province ecosystem; it and its accompanying landforms are not well represented within the NWPS.

The only imprints of man within the WSA are two ways (see Glossary), one on the southern rim and one on the northern rim of Cahone Canyon. These ways are revegetating and are screened by the surrounding pinyon-juniper woodland; they do not significantly impair the primary naturalness of the area. The archaeologic resources here include lithic sites, masonry dwellings, and food storage structures dating from the Anasazi culture. A cherrystem eliminates an old access route to an abandoned oil and gas well pad. The area also provides wildlife habitat for deer, predators, and raptors.

Solitude. The rugged terrain of the deep, winding canyons with numerous rock outcrops and boulder-strewn slopes provides excellent topographic screening. The dense cover of the pinyon-juniper on the slopes and canyon rims and the riparian growth in the canyon bottoms provide vegetative screening, which, together with the topographic screening, provide outstanding opportunities for solitude.

Primitive and Unconfined Recreation. The deep, rugged canyons of the WSA provide a scenic backdrop for various recreation activities including hiking, backpacking, horseback riding, hunting, photography and geologic and archaeologic sightseeing. The canyon bottoms can be used as hiking or riding routes and provide numerous, secluded camping spots. The steep canyon slopes and the ledges provide more challenging cross-country hiking or rock climbing opportunities. Hunting, a historic and continuing use of

this area, and the archaeologic, geologic, and scenic values of the area, enhance the available recreation opportunities. The WSA does provide outstanding opportunities for primitive and unconfined recreation.

Supplemental Values. The area is rich in archaeologic sites dating from the Anasazi culture. Ecologically, this area serves as a natural refuge for native flora and fauna that have been displaced from surrounding areas by agriculture and other human activity. Geologic formations are well exposed for scientific and educational study. The Morrison Formation here contains fossil plants and vertebrates.

Ecological Diversity. Cahone Canyon WSA has topography with many deep canyons and has two vegetation types: pinyon-juniper woodland and Great Basin sagebrush. The Great Basin sagebrush ecosystem is not presently represented in the NWPS. There are presently two designated wilderness areas with pinyon-juniper woodland vegetation in Colorado (Mesa Verde National Park and the Black Canyon of the Gunnison National Monument--a total of 20,000 acres).

Cross Canyon WSA

Naturalness. The WSA consists of portions of several canyons, including Cross, Ruin, and Cow canyons, which have been cut by fluvial erosion through an uplifted sedimentary bed. Numerous rock outcrops, ledges, and cliffs are exposed in the canyons which range in depth from 340 feet to 850 feet. In addition to the main canyons, there are numerous smaller tributary canyons. Pinyon-juniper woodland, the dominant vegetative cover with cottonwoods in places along the canyon bottom, together with Great Basin sagebrush, place this WSA within the Colorado Plateau Province. This ecosystem and its accompanying landforms (see Solitude) are not well represented within the NWPS. Primarily natural in character, imprints of man within the WSA consist of three ways, one of which has been blocked off to allow revegetation while the other two are mainly vehicle tracks. There are heavy concentrations of archaeologic and historic resources found in this WSA; it also provides wildlife habitat for deer, predators, and raptors.

Solitude. The rugged canyons with their narrow, steep inner gorges and numerous side canyons within a dense pinyon-juniper woodland provide excellent topographic and vegetative screening. The canyon bottom has a riparian zone which supports a mixture of cottonwood, willow, tamarisk, boxelder, and shrubs. The enclosed nature of the canyon system provides a feeling which enhances outstanding opportunities for solitude.

Primitive and Unconfined Recreation. The Cross Canyon WSA offers a variety of primitive and unconfined recreational opportunities such as hiking, backpacking, horseback riding, hunting, and photography. The canyon bottoms within the WSA provide foot or horseback routes and numerous, secluded camping sites. More challenging cross-country routes can be found on the canyon slopes and walls. From the mesa or cliff top, there are scenic panoramas of the Cross Canyon WSA and surrounding areas. This area definitely provides outstanding opportunities for primitive and unconfined recreation.

Supplemental Values. The area is rich in archaeologic sites dating from the Anasazi culture. Ecologically, this area serves as a natural refuge for native flora and fauna that have been displaced from surrounding areas by agriculture and other human activity. Geologic formations are well exposed for scientific and educational study. The Morrison Formation here contains fossil plants and vertebrates.

Ecological Diversity. Cross Canyon WSA has the same ecological diversity as Cahone Canyon WSA (see previous discussion).

Dolores River Canyon WSA

Naturalness. The center of this WSA is the deeply incised, meandering Dolores River Canyon; it also includes those tributary canyons and surrounding rimlands that are primarily natural in character. This rugged canyon system is cut down through a series of sedimentary strata resulting in many colorful ledges and massive cliffs interspersed with talus slopes. Approximately 30 miles of the Dolores River are included within the study area. Vegetation, which varies with terrain and elevation, includes a rim and mesa area that supports a pinyon-juniper woodland with occasional sage parks. On the canyon slopes a mixture of desert shrubs such as sagebrush, Mormon tea, squawbush, and buffalo berry are found. Scattered pinyon-juniper, cottonwoods, and an occasional ponderosa pine lie just under the canyon rim. The main canyon bottom and some of the tributary canyon support a thicker riparian growth. Some small enclaves of aspen and ponderosa pine are found within the WSA.

The WSA also contains ecological values (unique plants, including Kachina daisy and Eastwood monkeyflower; see Vegetation section) and archaeologic and paleontologic resources (including petroglyphs and pictographs along the canyon walls; see Glossary). It falls within the Colorado Plateau Province ecosystem because of its pinyon-juniper woodland and Great Basin sagebrush, an ecosystem with its accompanying landforms (see Solitude) that is not well represented within the NWPS. Deer, raptors, and other wildlife also find a unique habitat within the WSA.

Solitude. The deep, narrow, and extremely rugged Dolores River Canyon and its tributaries offer extensive topographic screening. The main canyon consists of twisting meanders with steep, often sheer walls and rock outcrops, ledges and talus fields with large boulders. Tributary canyons are often narrow, sheer walled and full of boulders. On the mesa tops and benches, pinyon-juniper woodland provides vegetative screening. The topographic and vegetative screening in certain locales provides outstanding opportunities for solitude here.

Primitive and Unconfined Recreation. During the spring runoff, the Dolores River provides a scenic whitewater river run. Throughout the year, the rugged canyon system offers opportunities for challenging cross-country hiking and backpacking, while numerous high cliffs provide outstanding rock climbing opportunities. Other available recreational activities include hunting, horseback riding, photography, and geologic sightseeing. The highly scenic canyon system enhances all of the available recreation activities. The Dolores River Canyon WSA provides outstanding opportunities for primitive and unconfined recreation.

Supplemental Values. The Dolores River Canyon WSA contains a number of supplemental values including geologic and scenic values associated with the deeply entrenched, sheer walled canyons an the exposed sedimentary strata; ecologic values including relic areas and rare plants; and archaeologic, historic, and paleontologic values.

Ecological Diversity. The Dolores River Canyon WSA is associated with deep canyons in the Colorado Plateau ecoregion. Two primary vegetation types are present: pinyon-juniper woodland and Great Basin sagebrush. (See Cahone Canyon WSA narrative for designated wilderness areas in these ecosystems.)

McKenna Peak WSA

Naturalness. The geomorphology of the area is dominated by a shale and adobe badlands topography and includes sandstone cliffs, canyons, and rolling hills. Vegetation varies from desert forbs and grasses to dense coniferous forests. McKenna Peak WSA is within a transition zone between the mountain mahogany-oak scrub, pine and Douglas-fir, pinyon-juniper of the Rocky Mountain Forest Province and the pine and Douglas-fir, pinyon-juniper and saltbush-greasewood of the Colorado Plateau Province.

Imprints of man in the McKenna Peak WSA are not substantially noticeable and are mitigated by either topographic or vegetative screening or both. This ecosystem and its accompanying landforms (see Solitude) are not well represented within the NWPS. In addition, the cumulative impacts of the ways and range improvements upon the unit's naturalness are negligible because the few imprints present are widely dispersed and do not dominate the landscape. This WSA also provides a partial habitat for a wild horse herd and large herds of wintering deer and elk. A large number of marine fossils cover the ground here.

Solitude. The combination of vegetation and topographic screening provides outstanding opportunities for solitude in the McKenna Peak WSA. The badlands near McKenna Peak and Brumley Point contain deep, narrow, twisting arroyos. From high points in the WSA, there are expansive vistas that give a feeling of vastness to the area. Dense pinyon-juniper woodland and rock outcrops provide screening in the northern part of Spring Creek Basin (the northern portion of the WSA).

Primitive and Unconfined Recreation. The diverse topography of the McKenna Peak WSA, including badlands, steep sandstone cliffs, and gently rolling mesas in combination with varied vegetation, provide outstanding primitive and unconfined recreation opportunities, some of which include horseback riding, hiking, rock climbing, backpacking, hunting, photography, and sightseeing.

Supplemental Values. The area contains unique scenic values due to the unusual geomorphology of the landscape and unspoiled scenic vistas of the surrounding lands. Numerous marine fossils are found within the WSA and in the western portion a wild horse herd is also found.

Ecological Diversity. McKenna Peak WSA is within a unique ecosystem type area--it occupies a transition zone between the Colorado Plateau and the Rocky Mountain Forest provinces with three vegetation types. The saltbrush-greasewood ecosystem is presently represented by one designated wilderness in Colorado (Great Sand Dunes National Monument--a total of 18,000 acres). The mountain mahogany-oak scrub ecosystem is presently represented by one designated wilderness in Utah (Lone Peak--a total of 30,000 acres). McKenna Peak WSA also has a pinyon-juniper ecosystem (see Cahone Canyon narrative).

Menefee Mountain WSA

Naturalness. The Menefee Mountain WSA, with topography composed of mountains and canyons, is primarily natural in character. It contains a number of features such as vertically walled canyons, overhanging cliffs, and varied plant communities. Pinyon-juniper and various mountain shrubs constitute the primary vegetation; at higher elevations, pinyon-juniper gives way to oakbrush, the dominant species above 7,000 feet.

McKenna Peak WSA and associated badlands topography.

Scattered stands of ponderosa pine and Douglas-fir can also be found associated with the oak habitat. This WSA is within a transition zone between the Rocky Mountain Forest Province and the Colorado Plateau Province. Neither ecosystem nor their accompanying landforms are well represented in the NWPS.

Only minor imprints of man are found within the WSA; most of them are ways in the northern portion and within East Canyon. Small, old coal mines are substantially unnoticeable and are effectively screened by topography and vegetation. There is a deteriorating log cabin near the mouth of Joe's Canyon and a fence line largely screened by vegetation. A small, unnoticeable stock reservoir is located within the southern portion. None of these imprints has adversely affected the natural character of the land. The WSA is located four miles east of Mesa Verde National Park and includes several archaeologic sites. Wildlife habitats include those for bald and golden eagles, deer, elk, bear, and mountain lion.

Solitude. Because of the rugged topography and the vegetative screening inherent to pinyon-juniper and oakbrush habitats, this WSA has outstanding opportunities for solitude. The presence of numerous canyons tends to disperse use, which also contributes to outstanding opportunities for solitude.

Primitive and Unconfined Recreation. The rugged terrain of the unit (steep-sided canyons and cliff-rimmed mesa tops) provides challenging hiking, backpacking and climbing opportunities. From the top of Menefee Mountain, panoramic vistas exist, including several surrounding mountain ranges and a series of plateaus. These vistas provide opportunities for sightseeing and photography and enhance the other recreation opportunities available in the WSA, providing outstanding opportunities for primitive and unconfined recreation.

Supplemental Values. The area contains habitat for both bald and golden eagles, elk, and deer. Archaeologic sites are found within the area, as well as some small, historic coal mines.

Ecological Diversity. Menefee Mountain WSA is located in a transition zone between the Colorado Plateau and Rocky Mountain Forest provinces and has two associated vegetation types: pinyon-juniper woodland and mountain mahogany-oak scrub. (See the Cahone Canyon WSA and McKenna Peak WSA narratives for details on designated wilderness areas in these ecosystems.)

Squaw/Papoose Canyon WSA

Naturalness. The WSA consists primarily of Squaw and Papoose canyons that have been cut by fluvial erosion into an uplifted sedimentary bed composed of the Morrison Formation and Dakota Sandstone. Because of the arid nature of this area, the canyon slopes are composed of exposed rock outcrops and steep talus slopes. Numerous tributary canyons merge juniper with an associated shrub understory of sagebrush, Mormon tea, mountain mahogany, rabbitbrush, cliffrose, and bitterbrush. This pinyon-juniper woodland and Great Basin sagebrush place the WSA within the Colorado Plateau Province, an ecosystem with its accompanying landforms (see Solitude) that are not well represented within the NWPS. Vegetation is thicker along the canyon floors with a mixture of cottonwood, tamarisk, saltbush, sedges, rushes, and cattails.

Within Squaw Canyon in the Colorado portion of the WSA, an old fence line that was bladed during construction is returning to a natural condition through revegetation and erosion. The surrounding pinyon-juniper forest provides screening, making this impairment only noticeable nearby. The WSA is primarily natural in character with the imprints of man's work substantially unnoticeable. It contains rich archaeologic resources, including lithic sites, masonry dwellings, and food storage structures dating from the Anasazi culture. The WSA also provides wildlife habitat for deer, predators, and raptors.

Solitude. The rugged topography of the steep, winding Squaw and Papoose canyons provides topographic screening within this WSA. Steep inclines and ledges limit accessibility and the meandering stream course provides natural visual barriers. Vegetative screening is provided by the pinyon-juniper on the canyon slopes and by the riparian growth in the canyon bottom. Because of the vegetative and topographic screening, outstanding opportunities for solitude are available here.

Primitive and Unconfined Recreation. Some of the outstanding primitive and unconfined recreation opportunities available are hiking, backpacking, hunting, rock climbing, horseback riding, and photography. The secluded canyon bottoms make good hiking or riding paths, while the canyon slopes and walls provide more challenging routes for hiking and rock climbing. The rugged and scenic terrain, diverse wildlife, and archaeologic sites enhance the available recreation opportunities.

Supplemental Values. The area is rich in archaeologic sites dating from the Anasazi culture. Ecologically, this area serves as a natural refuge for native flora and fauna that have been displaced from surrounding areas by agriculture and other human activity. Geologic formations are well exposed for scientific and educational study. The Morrison Formation here contains fossil plants and vertebrates.

Ecological Diversity. Squaw/Papoose Canyon WSA is associated with pinyon-juniper woodland and Great Basin sagebrush ecosystems. (See Cahone Canyon WSA narrative for details on designated wilderness areas in these ecosystems.)

Tabeguache Creek WSA

Naturalness. With its center Tabeguache Creek and the creek's deep canyon, the WSA is characterized by ridges and mesas divided by rough tributary canyons. Except for the riparian zone along Tabeguache Creek, pinyon-juniper woodland is the dominant vegetation.

The WSA contains educational, scientific, and unique archaeologic values. Archaeologic sites are found within this area--probably both Fremont and Ute Indians--as this canyon served as a trail over the Uncompahgre Plateau. It falls within the pinyon-juniper woodland of the Colorado Plateau Province, an ecosystem with its accompanying landforms (see Solitude) that are not well represented within the NWPS. The WSA also contains a unique habitat for deer, elk, black bear, raptors, and snakes.

Solitude. Outstanding opportunities for solitude are available in the WSA because of the topographic screening provided by the winding, narrow Tabeguache Creek Canyon and the surrounding rugged benchlands and tributary canyons, which cover most of the area. The WSA contains outstanding opportunities for solitude.

Primitive and Unconfined Recreation. The scenic quality of Tabeguache Canyon, combined with the perennial stream, provide outstanding opportunities for hiking, backpacking, and horseback riding. The benchlands above the canyon offer more challenging travel routes. Hunting, photography, and geologic sightseeing are other available recreation opportunities. The WSA contains outstanding opportunities for primitive and unconfined recreation.

Supplemental Values. The area, which contains a variety of geologic, educational, scientific, and archaeologic values, is also a natural refuge for wildlife.

Ecological Diversity. Tabeguache Creek WSA is associated with the pinyon-juniper woodland ecosystem. (See Cahone Canyon WSA narrative for details on designated wilderness in this ecosystem.)

Weber Mountain WSA

Naturalness. This WSA, immediately west of Menefee Mountain, consists of numerous canyons that radiate from a linear-shaped mountain. Exposed sandstone forms overhangs and vertical cliffs along the slopes of the mountain and within the canyons. The vegetation consists primarily of pinyon-juniper with areas of sagebrush interspersed throughout and some conifers and scrub oak near the mountaintop.

The unit is pristine in character with only one minor imprint within the center--an old, dry reservoir that has been revegetated and is returning to its natural condition. The area is free of any substantial imprint of man. The archaeologic resources have been largely unexplored.

Weber Mountain WSA is in the transition zone between the Rocky Mountain Forest Province and the Colorado Plateau Province; neither ecosystem nor their accompanying landforms are well represented in the NWPS. Weber Mountain WSA also contains important wildlife habitats for deer, elk, bighorn sheep, bear, mountain lion, and raptors.

Solitude. Due to Weber Mountain's rugged topography and its associated drainages and vegetative screening (provided by dense stands of pinyon-juniper and scrub oak), it possesses outstanding opportunities for solitude. The mountain's configuration and limited access into the WSA provide a sense of remoteness and seclusion which also contributes to feelings of solitude.

Primitive and Unconfined Recreation. The Weber Mountain WSA possesses outstanding opportunities for primitive and unconfined recreation. Its rugged terrain provides hardy challenges to the hiker, explorer, and climber; supplemental values within the WSA such as panoramic vantage points, wildlife, and archaeologic sites enhance the various recreation opportunities. Lack of water in the unit is a limiting factor, yet a number of activities can still be pursued, such as photography, hunting, and sightseeing.

Supplemental Values. The area, which contains habitat for both bald and golden eagles, bighorn sheep, and deer, also possesses archaeologic sites. A portion is contiguous to Mesa Verde National Park.

Ecological Diversity. Weber Mountain WSA is located in a transition zone between the Rocky Mountain Forest and Colorado Plateau provinces. Vegetation types

associated with it are: pine-Douglas-fir forest and pinyon-juniper woodland. The pine-Douglas-fir forest is presently represented by ten designated areas (263,000 acres). (The Cahone Canyon WSA narrative discusses the pinyon-juniper woodland ecosystem.)

Manageability Concerns

Table 2-19 outlines current manageability questions for the WSAs.

Lands

Land Ownership and Use

The San Juan-San Miguel planning area consists of approximately 994,000 subsurface and surface acres of public lands and 297,000 acres of subsurface mineral estate. Table 2-20 lists counties within the planning area, their county seats, and their corresponding public land acreage. Following is a discussion of lands within the planning area, made up of four sections (see maps at back of this RMP).

Northwest Section. Approximately 70 percent of the public lands is in the northwest portion of the planning area. It stretches east from the Colorado-Utah State boundary and is bordered on the other sides by solid blocks of national forest lands--the Manti-La Sal National Forest to the northwest, the Uncompahgre National Forest to the north and southeast, and the San Juan National Forest to the southwest.

The historic patenting of mining claims and homesteads has influenced the land ownership pattern in this section; interspersed private lands in this area lie principally along the major drainages, which run predominantly northwest to southeast--the Dolores River and Paradox, Gypsum, and Disappointment creeks.

The small communities of Uravan, Naturita, and Slickrock are well hemmed in by Federally owned lands; the settlements at Paradox, Redvale, Norwood, Egnar, Bedrock, Dove Creek and Cahone are located in areas of consolidated private ownership.

Southwest Section. BLM-administered public lands are in the western part of this portion of the planning area and are increasingly scattered to the east. Bordered on the west by the Utah State line, public land runs along steep canyons and mesas (i.e., McElmo, Sandstone, Woods, Yellowjacket, Sand, and Goodman canyons). To the south lies the Ute Mountain Ute Indian Reservation and to the east, Cortez, the county seat of Montezuma County. East of Cortez, a few tracts of BLM lands border Mesa Verde National Park and the Southern Ute Indian Reservation.

All of the communities in this area--Pleasant View, Yellowjacket, Roundup, Cortez, Dolores, Mancos, Hermosa, Durango, and Hesperus--are well-surrounded by private land, mainly agricultural in nature, that could adequately provide for any needed community expansion. The fragmented land pattern makes BLM surface management difficult.

Southeast Section. BLM-administered public lands continue in widely scattered blocks throughout the eastern portion of La Plata County, where intermingled private lands predominate. The San Juan National Forest borders the public lands to the north and east and the Southern Ute Indian Reservation lies to the south.

Table 2-19. Manageability Concerns Regarding WSAs.

WSA	Concerns
Cahone Canyon	Fourteen existing pre-FLPMA oil and gas leases. Includes 3,268 acres or 36% of total WSA; oil and gas seismic activity previously authorized. Uranium and vanadium exploration in area; within KGS; cultural resources need protection.
Cross Canyon	Thirty-three existing pre-FLPMA oil and gas leases (includes Utah). Includes 9,073 acres or 71% of total WSA. Oil and gas seismic activity and uranium and vanadium exploration previously authorized; needs livestock management in future; within KGS; cultural resources need protection.
Dolores River Canyon	Nine existing pre-FLPMA oil and gas leases. Includes 5,022 acres or 18% of total WSA. Oil and gas seismic activity previously authorized; uranium, vanadium, copper and silver exploration in areas; float boating occurs.
McKenna Peak	Two existing pre-FLPMA oil and gas leases. Includes 156 acres or 1% of total WSA. Uranium & vanadium exploration in area; needs livestock management in future; wild horses presently in area; erosion and salinity control projects may be needed. Contains 320 acres of State lands.
Menefee Mountain	One existing pre-FLPMA oil and gas lease. Includes 1,132 acres or 16% of the total WSA. Within Durango KRCRA; also contains 40 acres private land-private minerals; 120 acres-BLM surface-private minerals.
Squaw/Papoose Canyon	Eleven existing pre-FLPMA oil and gas leases (includes Utah). Includes 2,357 acres or 21% of total WSA. Oil and gas seismic activity previously authorized; two wells staked in 1983 in area; uranium and vanadium exploration previously done in area; within KGS; cultural resources need protection.
Tabeguache Creek	No existing pre-FLPMA oil and gas leases. Cultural resources need protection.
Weber Mountain	Four pre-FLPMA oil and gas leases. Includes 2,272 acres or 36% of total WSA and two wells drilled during 1982-83. WSA within Durango KRCRA, adjacent to Mesa Verde National Park Wilderness Area (no visitor use allowed); WSA also adjacent to KGS. Contains 640 acres of State lands.

Note: All WSAs have adjacent farmlands.
Source: BLM Data 1984.

Table 2-20. Counties within Planning Area.

Counties	State (Colorado unless otherwise noted)	County seat	Public land acreage
Archuleta		Pagosa Springs	10,500
Dolores		Dove Creek	55,000
La Plata		Durango	29,500
Mesa		Grand Junction	32,500
Montezuma		Cortez	189,000
Montrose		Montrose	651,000
Rio Arriba	New Mexico	Tierra Amarilla	30,000
San Juan		Silverton	49,000
San Miguel		Telluride	299,000

Source: BLM Data 1984.

The fragmented ownership pattern here makes BLM surface management difficult, especially on tracts without legal and(or) physical access and particularly on the isolated 40-acre and 80-acre tracts near Pagosa Springs. The continuing upsurge in subdividing lands for developing seasonal vacation homes has further complicated the access situation.

Northeast Section. BLM-administered lands near Silverton in San Juan County comprise approximately 51,000 acres of public lands, nearly surrounded by National Forest lands--to the northwest lies the Uncompahgre National Forest; to the west and south and east, the San Juan National Forest.

Lack of records of cadastral surveys and irregular parcel boundaries are the major impediments to developing on-the-ground programs within this section, which is at least 80 percent unsurveyed. Tiny, irregular strips of BLM land are all that remain unpatented along the major drainages and these lands are extremely difficult to locate. Patented mining claims scattered throughout the area are usually the only surveyed lands for miles. The interspersed, patented lands also contribute to legal access problems in some parts of this section. Patented claims are concentrated along major gulches where roads or jeep trails have been built, often for the sole purpose of access to both patented and unpatented mining claims.

The economy of Silverton, county seat and only town in San Juan County, is largely seasonal due to the high elevation (9,300 feet) and is based upon mining and tourism. The Standard Metals Mayflower Mill north of Silverton provides a large portion of Silverton's economy. The town itself provides residential occupancy for its 850 permanent residents and commercial uses for a large summer tourist influx. The Durango-to-Silverton line of

the Denver and Rio Grande Narrow Gauge Railroad carries more than 100,000 passengers to Silverton during the 3-month summer season; the train runs to Cascade Creek during nine months of the year (approx. halfway to Silverton).

Fire

The Montrose District has developed a Normal Year Fire Plan that is designed to manage fires as they occur in all resource areas of the District. Cooperative agreements with the USFS, the National Park Service, BIA, the Colorado State Forest Service, and county governments are in place to provide quick initial attack. An average of 47 fires per year was suppressed in the area from 1970 through 1980. The average sizes of the fires were less than three acres with an occasional 20-acre fire. The largest fire during the period was in June of 1974 when 2,570 acres burned three miles south of Naturita, Colorado. Most fires are caused by lightning and occur in standing pinyon-juniper.

The Vigil-Abeyta and Archuleta Mesa areas are considered high resource value areas due to the commercial timber available here. There are many other areas that contain improvements of various types that require immediate fire suppression actions.

The Paradox Limited Suppression Plan, covering approximately 250,000 acres in the northern portion of the planning area, was implemented in 1982. Six fires were monitored in 1982 and 1983 and allowed to burn out naturally with a total of 14 acres burned.

Transportation

Developing and managing a transportation system are accomplished through using a transportation plan, completed for the planning area in 1981 and consists of the following:

Type of Road or Trail	Miles of Road
Primary - Surveyed and designed to the required standard (maintained once a year)	226
Secondary - Maintained at existing standards (every two years)	90
Primitive - Maintained (every three years)	435
Foot and Horse Trails - Maintained (when necessary)	49
Total	800

Road maintenance funds currently provide less than 20 percent of funds needed for their proper maintenance. Numerous areas of public land do not presently have legal access. More than 100 easements would be needed in the planning area to provide legal access to the roads presently on the transportation plan. In addition to the approximately 800 miles of road in the transportation plan, another 1,018 miles of

unmaintained road were inventoried in 1980. These roads are presently used in managing the public lands but little or no maintenance is being provided.

Economics

The San Juan-San Miguel economic planning area includes areas of nine counties, eight in Colorado and one in New Mexico. The total 1980 population of these counties was approximately 101,000. Table 2-21 shows the 1970 and 1980 population, per capita income, and number of persons employed by county and state. Significant population growth may be seen in all counties except Dolores and San Juan. All of the counties in the planning area have a notably lower per capita income than the Colorado average.

Table 2-22 shows personal income by major sources by county. Government, services, and construction can be seen to be the top three sources of income in the planning area. Minerals, transportation and public utilities, and retail trade also are substantial sources of personal income.

Table 2-21. Population, Per Capita Income, and Employment Within Planning Area.

	Population		Per Capita Income		Employment	
County	1970	1980	1970	1980	1970	1980
Colorado						
Archuleta	2,733	3,664	2,744	7,467	934	1,129
Dolores	1,641	1,658	2,022	7,471	567	562
La Plata	19,199	27,195	2,779	7,378	7,183	13,782
Montezuma	12,952	16,510	2,441	7,108	4,474	6,322
Montrose	18,366	24,352	2,758	6,815	7,004	10,680
San Juan	831	833	2,301	6,454	529	489
San Miguel	1,949	3,192	2,148	5,747	726	1,698
New Mexico						
Rio Arriba	21,268	23,617	2,074	5,588	6,201	8,756
Totals						
Colorado	2,207,259	2,889,735	3,887	10,033	869,534	1,399,733
New Mexico	1,170,055	1,299,968	3,072	7,878	323,581	518,000

Sources: U.S. Census 1980; Regional Economic Information System 1984; Colorado Division of Employment and Training 1984.

Table 2-22. Personal Income Within Planning Area. 1/

Major sources of income	County								Total reported 2/	Percent of total
	Colorado							New Mexico		
	Archuleta	Dolores	La Plata	Montezuma	Montrose	San Juan	San Miguel	Rio Arriba		
Farm	13,008	2,852	1,416	4,078	3,999	0	86	3,997	29,436	7
Agriculture	D	58	753	843	913	0	D	648	3,215	1
Minerals	547	D	2,417	4,753	15,502	4,532	4,037	993	32,781	8
Construction	D	146	12,085	14,415	6,789	91	1,567	5,696	40,789	10
Manufacturing	638	L	6,819	3,246	7,825	157	142	3,103	21,930	5
Transportation & public utilities	382	708	10,466	4,919	16,552	L	D	6,999	40,026	9
Wholesale trade	334	388	5,269	5,015	4,942	L	D	969	15,917	4
Retail trade	1,883	611	21,453	11,213	14,038	D	2,251	9,436	40,005	9
Finance, insurance & real estate	D	D	7,716	2,904	4,744	99	1,481	2,523	19,467	5
Services	D	212	35,023	8,122	13,715	D	2,017	18,530	77,619	18
Government	3,278	1,293	30,403	15,663	22,913	633	2,817	28,565	10,261	24
Total labor & properties income	20,070	6,268	133,820	75,171	111,932	5,512	14,398	81,459	331,446	

1/ Regional Economic Information System 1980; figures in $1,000.

2/ Figures in this column are 95% of total due to presence of L and D figures; D = Not reported to avoid confidential disclosure; L = Less than $50,000.

Source: BLM Data 1984.

Recreation

The San Juan-San Miguel planning area derives significant economic benefit from expenditures made for recreation activities. Many of these activities are not presently quantifiable--as for example, hiking, camping, and backpacking. Numerical data do exist however for fishing, hunting, white water boating, and generalized tourist travel in the area.

Fishing

In 1980, 559,000 recreation visitor days (RVDs) were spent fishing in the planning area (see Table 2-23). Fishing occurred at significant levels in all counties and contributed expenditures of approximately $38 million to the economy (McKean and Nobe 1983). Approximately 200,000 RVDs and approximately $13.3 million in expenditures are attributed to public lands.

Hunting

In 1980, 344,000 RVDs were spent hunting in the planning area. Hunting occurred at significant levels in all counties and contributed expenditures of approximately $45 million to the economy (McKean 1983). Approximately 22,000 RVDs and approximately $3 million in expenditures are estimated to be attributable to public lands. Table 2-24 shows 1980 hunting RVDs and expenditures by types of animals.

White Water Boating

The Dolores River is extensively used for white water boating. A 1980 estimate of 12,500 RVDs was made for the Dolores. Expenditures for white water boating are estimated at approximately $1 million annually within the planning area.

Table 2-23. Fishing RVDs by County
Within Planning Area.

County	RVDs
Archuleta	54,130
Dolores	47,145
La Plata	255,182
Montezuma	35,171
Montrose	64,606
San Juan	26,191
San Miguel	76,579
Total	559,004

* Source: CDOW, personal commun. 1983.
Note: Figures are as of 1980.

Table 2-24. Hunting RVDs within Planning Area. 1/

Animal	RVDs 2/	Expenditures ($) 3/
Deer	118,097	24,724,000
Elk	125,779	18,830,000
Other Big Game	16,007	937,000
Small Game	64,951	886,000 4/
Waterfowl	6,242	
Upland Birds	12,963	
	344,039	45,377,000

1/ Includes Big Game Management Units (GMUs) 60, 61, 70 through 75, 751, 77 and 78, and Small GMUs 62, 88, and 90.
2/ McKean 1983.
3/ CDOW 1980.
4/ Includes expenditures for small game waterfowl and upland birds.
Note: Figures are as of 1980.

Tourist Travel

Tourist travel in the planning area generates significant levels of income and employment. Travel-related payroll for 1980 is estimated at $28 million and is responsible for 4,600 jobs here. Table 2-25 shows 1980 travel-related payroll and associated jobs by county. In Montezuma County, travel to archaeologic sites in Montezuma and Dolores counties contributes significantly to the travel level. It is estimated that 18,000 RVDs were spent at BLM-administered cultural sites in 1980. Annual expenditures of approximately $0.5 million may be expected from this level of use.

Minerals

In 1980, minerals with a commercial value of $165 million were produced in the planning area, including sand and gravel, uranium and vanadium, petroleum, gas, coal, and metals. Public lands are estimated to have yielded approximately $37 million worth of these materials. Table 2-26 shows the commercial value of minerals produced by county in 1980. Estimates of values by commodity are also included.

Forest Products

Complete data are not available for forest product production in the planning area; however, the USFS is estimated to account for 90 to 95 percent of the production that occurs. A 10-year average of USFS's timber sales (1970-1980) is estimated to be approximately 43 million board feet (MMBF) of timber valued at approximately $780,000, which suggests an overall production level (including figures from the USFS, the Colorado Forest Service, the BIA, BLM, and private sales) of 47 MMBF valued at approximately $860,000.

Timber production on public lands is estimated at 200,000 BF of sawtimber per year. Relative to overall production in the planning area, this is an economically insignificant level of production (less than 1%). In addition to timber production, BLM land provides an average authorized yearly total of approximately 900 cords of firewood, 500 Christmas trees, 500 wildlings (see Glossary), and 2,000 posts. Total BLM forest production of all commodities is estimated to have a commercial value of $250,000.

Table 2-25. Travel-Related Payroll by County Within Planning Area.

County	Payroll (in $1,000)	Number of jobs
Archuleta	$ 3,195	529
Dolores	96	13
La Plata	15,711	2,566
Montezuma	3,758	613
Montrose	3,111	505
San Miguel	1,301	213
San Juan	1,039	170
Total	$28,211	4,609

Note: Figures as of 1980.
Source: Business Research Division 1980.

Table 2-26. Dollar Value of Minerals Produced by County Within Planning Area.[1/]

County	Sand and gravel	Uranium/ vanadium	Metals	Petroleum	Gas	Coal
Archuleta	209	--	--	1,521	28	170
Dolores	9	--	--	1,278	1,486	--
La Plata	471	--	--	1,416	3,631	1,894
Montezuma	29	--	--	3,124	1,277	--
Montrose	2,220	17,277	--	--	--	1,863
San Juan	8	--	19,505	--	--	--
San Miguel	171	5,739	--	135	1,780	1
Total	3,117	23,016	19,505	7,474	8,202	3,928
BLM Land[2/]	400	21,000	6,800	3,500	3,200	1,700

[1/]Colorado Division of Mines 1980; figures in $1,000.
[2/]BLM estimate 1984.
Note: Figures are calculated as of 1980.

Livestock Grazing

Approximately 116,000 cattle and 62,000 sheep are estimated to graze in the planning area. The forage required by this number of animals is estimated to be 1.5 million AUMs annually with a value of $12.8 million. Fifty-five thousand AUMs have been grazed annually (3-yr avg. use) from BLM land and valued at $0.5 million. Based upon an average of $1.88/AUM, BLM has received approximately $94,000 annually for the past three years for this forage. Table 2-27 shows 1980 to 1982 average livestock numbers by county.

Table 2-27. Estimated Livestock Numbers by County Within Planning Area.

County (Colorado)	Cattle	Sheep
Archuleta	12,833	1,067
Dolores	5,467	--
La Plata	34,500	10,000
Montezuma	27,667	12,066
Montrose	28,000	23,666
San Juan	--	--
San Miguel	7,667	15,000
Total	116,134	61,799

Source: Colorado Department of Agriculture, 1982 (1980 through 1982 average).

Social Setting

While BLM sociologic baseline data do not currently exist for the San Juan-San Miguel planning area, the planning area is characteristic of rural counties found in western Colorado. Urban areas near Durango are experiencing growth due to recreation and light industry, while rural areas near Egnar and Naturita are either growing slightly or declining in population due to mineral industry shutdowns.

Much of the lifestyle of the area involves outdoor activities and many of the most popular recreation activities are outdoor oriented. Thus, the resources managed by BLM are of interest to much of the population.

Many residents value the rural character of the area as an important part of their lifestyles. An appreciation for the wide-open spaces, natural values, solitude and personal freedom is generally found. Outside control of land or any kind of outside interference is generally resented.

CHAPTER THREE -

ENVIRONMENTAL CONSEQUENCES

CHAPTER THREE
ENVIRONMENTAL CONSEQUENCES

Introduction

Chapter Three discusses the physical, biologic, and economic consequences of implementing the alternatives described in Chapter One, and it discusses only the resources that would be affected; we assume that no important impacts to climate, air quality, geology, topography, transportation, noise, and prime and unique farmlands would result from BLM management actions. An interdisciplinary approach was used in developing these impacts (see Table 1-11 for a comparative analysis of impacts by resources at the end of Chapter 3).

General Assumptions and Guidelines

To analyze the impacts of implementing the alternatives, the following assumptions were made:

1. Only significant changes or impacts (which varies by resource) will be analyzed.

2. Changes or impacts described and analyzed are short term unless otherwise stated; long-term impacts would occur over a 20-year period. Short-term impacts would occur within a 10-year period; however, for the no-grazing alternative, the short term is 20 years and the long term is 100 years.

3. The management actions were analyzed under the assumption that all actions would be fully implemented.

4. It was assumed that adequate funding and manpower would be available to implement the management actions discussed in the alternatives. However, in practice, funding and manpower are variables that cause unpredictable changes in implementation.

Assumptions and Guidelines Specific to Certain Resources

Soils and Water

Demand for more water would continue to grow and be more than the water supply throughout the Western United States; demand for better water quality would also grow.

Stipulations protecting watersheds from impacts associated with mineral exploration and development would be included in mineral leases and(or) site-specific environmental assessments for all actions.

BLM is currently in the process of identifying all water sources on public land that qualify as public water reserves pursuant to the Executive Order of April 17, 1926 (Public Water Reserve No. 107). The water quantity reserved is that which is necessary to meet livestock and human uses. Water needed to support BLM programs beyond these needs would be applied for through the Colorado State water appropriation system on a case-by-case basis.

Upstream diversions would not dewater the streams upon which the aquatic wildlife rely.

Assessing impacts related to vegetation were based on expectations of near-normal annual climate. Severe climate variations could drastically alter vegetation responses.

Cultural Resources

General and site-specific stipulations will continue to be included in environmental work for all actions. Avoidance will continue to be the primary form of mitigation for any impacts.

Cultural resources will continue to deteriorate via natural forces, visitation, and vandalism if corrective and preventative action is not taken. Stabilization, patrol, and visitor management are proven methods of neutralizing and even reducing these types of deterioration.

The Anasazi Heritage Center will be built.

Public interest in and advocacy of cultural resources via recreation, protection, and educational research will continue to increase, especially in more remote areas.

BLM will continue to provide for an ongoing data gathering and maintenance system for cultural sites (as a result of items mentioned in the first paragraph) in response to the needs of other resource users.

An increase in vandalism to cultural sites directly corresponds to increases in access nearer to these sites.

Estimates on affected sites are taken from existing site densities for similar environmental zones nearby, which have had Class III surveys or from existing Class II survey data (see Glossary).

Wildlife (Aquatic and Terrestrial)

The CDOW can successfully control big game populations on a Game Management Unit (GMU) basis.

Some big game crucial winter range on private land would be lost, which would increase the big game forage demand on public land over the next ten years if total big game populations are to be maintained.

All land identified for disposal, which would occur over a ten-year period, would lose its value as big game habitat (worst case analysis of impacts).

Significant increases in sediment yield would adversely affect fisheries.

The condition of the riparian zone influences the quality of the aquatic environment.

Forestry

Commercial forest land would be harvested on an 80- to 180-year rotation; pinyon-juniper woodland on a 150- to 300-year rotation; and aspen woodland on an 80- to 120-year rotation.

Implementing all vegetation manipulations would happen over a 10-year period.

Energy and Minerals

All mineral rights would be reserved on land identified for disposal where valuable minerals can be identified.

Mines would be provided with necessary leases to continue their present levels of operation.

Lands

BLM would reserve access across parcels disposed of in cases where public access to adjacent State or Federal land is needed. (In most cases, BLM does not have legal access rights to parcels to be disposed of.)

Transportation

Easement acquisition and road development and improvement would be expanded over a 10- to 20-year period. By diversifying the transportation system development, impacts would be insignificant.

Livestock Grazing

The ranch models used in economically evaluating the management proposals are representations of actual ranching operations in the planning area.

Increases in available forage were based on inventory data and estimating increased ecological vegetation condition, which would result from management facilities, intensive grazing systems, and vegetation manipulations.

Providing for basic plant needs for reproduction, growth, and establishment results in similar responses regardless of specific location (Martin 1973).

Expected changes as a result of implementing intensive grazing systems are projected to improve vegetation condition in the long term. This assumption is substantiated by studies concerning deferred rotation grazing by Keng and Merrill (1960). Since deferred and rest-rotation systems are considered in the literature to be equal to or superior to deferred rotation for vegetation response, it is assumed that these grazing systems will respond similarly.

The critical period developed and used to constrain livestock grazing on all Improve "i" category allotments corresponds to the period Hormay (1970) discusses (defoliation is most harmful when food reserves are lowest, usually in the spring green-up period when

plants are growing most rapidly). Continuous spring use for browse plants can severely deplete their food reserves and thus adversely affect reproductive growth and plant vigor and eventually can cause the plant's death (Garrison 1972).

Wilderness

Current management of wilderness includes existing MFPs. The impacts discussed in Chapter Three are based on current management prior to BLM's Interim Management Policy (Revised July 12, 1983).

It is assumed that the wilderness recommendation for this RMP will be adopted by the President and by Congress.

Public demand for wilderness areas in the planning area will increase annually at the national average (10%).

Visual Resources

All acreage proposed for vegetation manipulation within the planning area could be accomplished within VRM guidelines.

The objectives for each VRM class describe the degree to which projects would be designated to blend with the existing landscapes. Any visual changes or impacts that fall within the acceptable visual contrast limits of a particular class are not considered significant. A change in VRM classification is considered significant, which would occur because of wilderness designation or primitive recreation management.

The main goal of the VRM program is to maintain the landscape's natural scenic qualities under a variety of uses. Some projects may have short-term visual impacts (3 to 5 years) that might exceed the management objectives for a given geographic area. However, these impacts are not considered significant where long-term rehabilitation plans (from 5 to 20 years) are implemented to maintain visual contrast within the acceptable contrast limits.

ABOVE TIMBERLINE WITHIN THE SILVERTON SPECIAL RECREATION MANAGEMENT AREA.

Resource Conservation Alternative

Introduction

This alternative provides management direction to enhance nonconsumptive natural resource values. Multiple resource uses will continue even though some areas will have limited use or will be closed to certain uses. The following discussion by resource describes overall management within the planning area. The Resource Conservation Alternative contains two subalternatives--No Grazing and Ecological Representation.

Energy and Minerals

The no leasing and no-surface occupancy oil and gas stipulations imposed for the peregrine falcon eyrie on Perins Peak would continue on 1,480 acres, per the current oil and gas umbrella EA.

The peregrine falcon eyrie on Perins Peak decreases the available coal leasing lands for development and production in the Durango KRCRA by 1,480 acres. This would be a long-term impact of decreasing the available coal lease area by approximately 1.3 percent (BLM Data 1984).

Critical deer and elk winter range areas will limit periods of oil and gas exploration and development operations on 248,890 acres. Operations may be conducted between May 1 and November 30, a period established in the oil and gas umbrella EAs. This acreage represents a 3 percent increase over the Current Management Alternative. Impacts are not significant because they do not restrict operations.

The no-surface occupancy stipulation per the Sacred Mountain and San Miguel oil and gas umbrella EAs imposed for the Dolores River SRMA decreases by 21,600 acres the area in which oil and gas exploration, development, and production can be accomplished (BLM Data 1984). The majority of this acreage cannot be occupied because of steep terrain and costly operations.

Management of the Dolores River SRMA under this alternative would decrease the area for mining claim location and subsequent exploration, development, and production on 21,600 acres due to withdrawal from mineral entry. This represents approximately 2 percent of the planning area acreage and impacts would be for the long term.

Designating all eight WSAs as wilderness will have the following impacts to mineral resources (see Table 3-1 for estimated reserves within the WSAs).

Withdrawal of coal in the Menefee Mountain and Weber Mountain WSAs would result in a loss of approximately 95 million tons of coal reserves (62 million in Menefee, 33 million in Weber). This represents 12.5 percent of the total estimated reserves within the Durango KRCRA from Mesa Verde National Park to Hesperus. Impacts would be for the long term.

Withdrawal of the coal in the Tabeguache Creek WSA could result in a loss of an unknown amount of coal reserves. This WSA is not within a KRCRA but is indicated as having a moderately favorable potential for the resource. There is probably low potential for development of the Dakota Coal in this area.

Withdrawal from leasing for oil and gas in the eight WSAs (102,601 acres) would result in a possible loss of 5.7 million barrels of oil, 8.3 billion cubic feet of gas, and 46 billion cubic feet of CO_2. No reserves have been estimated for the McKenna Peak and Tabeguache Creek WSAs because it was determined that low potential exists for the resource. Withdrawal would not affect pre-FLPMA leases with valid rights.

Table 3-1. Oil, Gas and CO_2 Estimated Reserves within WSAs.

WSA	Barrels of oil	Gas (mcf)
Cahone Canyon[1/]	368,940	737,880
Cross Canyon[2/]	415,360	830,720
Dolores River Canyon		4,216 mmcf
Menefee Mountain	2.4 million	704,352
Squaw/Papoose Canyon[2/]	495,440	990,880
Weber Mountain	2.02 million	604,824

[1/]Cahone Canyon WSA contains 46,118 mmcf of CO_2.
[2/]Includes Utah figures.
Note: The estimated reserves were calculated by determining reservoir characteristics of nearby fields and then discounting that figure by the wildcat ratio of 11% for the area. The 11% figure was assumed to be the volume of oil and gas most likely to occur within the WSA. Impacts would be for the long term.
Source: BLM Data 1984.

Withdrawal from mineral entry by designating the eight WSAs as wilderness would most greatly affect locatable mineral development in the Squaw/Papoose, Cross, and Dolores River canyon WSAs. Withdrawals would not include pre-FLPMA claims with valid discovery. Combined acreage of these three WSAs is 38,670 acres, which represents approximately 3 percent of the planning area acreage. Squaw/Papoose Canyon and Cross Canyon WSAs have a high favorability for occurrence of uranium and vanadium mineralization. Dolores River Canyon WSA is indicated as having a high favorability for occurrence of base and precious metals, and there is also potential for uranium and vanadium occurrence in the Chinle Formation found there.

The greatest long-term impact would be from designating the Squaw/Papoose Canyon and Cross Canyon WSAs as wilderness. Extensive exploration drilling by Western Nuclear, Inc., has indicated that a uranium ore body possibly extends into both WSAs. Designating these areas as wilderness could preclude any development of the ore body.

No-leasing or no-surface occupancy oil and gas stipulations for cultural areas would decrease available acreage for oil and gas leasing, exploration, development, and production by 7,625 acres, which represents an increase of 425 acres from current management for additional sites. The 7,625 acres represent 0.6 percent of the planning area acreage and impacts would be for the long term.

No mineral entry on cultural withdrawal areas would decrease available acreage for mining claim location, exploration, and development on 4,785 acres, a 425-acre increase beyond the Current Management Alternative. The total acreage represents approximately 0.4 percent of the planning area and impacts would be for the long term.

Travel restrictions associated with various programs will require mining claimants to file Plan of Operations under 43 CFR 3809 instead of a Notice of Intent.

Federal coal for exploration and development would be available on 34,000 acres in the Durango KRCRA.

Possible future coal leasing would not be available on the Nucla and East Cortez KRCRAs. Managing sand and gravel permits on approximately 880 acres will not provide for meeting future demands for the resource.

Disposal of public lands with reservation of minerals to the Federal government will result in 18,000 additional acres of split estate management, which will add approximately 6.1 percent more split estate lands than currently exist which increases manageability problems. Impacts would be for the long term.

Summary

All impacts to minerals in this alternative are long term.

Significant impacts of this alternative are the withdrawals from mineral entry (approx. 129,000 ac) and no-leasing and no-surface occupancy stipulations on the recreation portion of the Dolores River (21,600 acres). Greatest impacts will be from designation and withdrawal of all WSAs, which will preclude development of the coal, oil and gas, and uranium resources that have a high probability of being present in some of the areas, with the exception of those lands containing pre-FLPMA leases or claims with valid rights or discoveries.

The production and use of coal, oil and gas, and other minerals are irreversible commitments of natural resources. To the extent they are developed in this alternative, there will be irreversible and irretrievable commitments of resources.

Vegetation

The only significant short-term impacts to vegetation that would occur are probable increases of forage plant vigor where livestock reductions result in lowered utilization levels. Current utilization trends will continue in the short term until use patterns are disrupted with implemented grazing systems and facilities.

Figure 3-1 illustrates the expected long-term changes in vegetation condition. Projections are based on the potential of existing vegetation to respond to changes in grazing management and improvements. The major long-term impacts to vegetation would be slight improvements in the type and productivity of forage species on sites that are currently in poor or fair condition. Under intensive management, some sites would be converted from poor to fair condition and from fair to good condition.

Additional forage may be produced as a result of timber and woodland harvesting.

Proposed watershed improvement treatments and wildlife treatments would have long-term positive impacts to vegetation and incidentally to livestock grazing. Increased vegetation densities and productive and available forage will result from the proposed treatments.

Impacts to T&E plants would be positive in the short and long term because of inventories and special stipulations on all proposed actions.

Existing and possibly expanded limited fire suppression plans would affect vegetation resources in the long term by allowing more pinyon-juniper woodlands and sagebrush acreage to burn naturally and to be replaced with herbaceous vegetation.

Wilderness designation would have long-term positive impacts to vegetation under this alternative by precluding many development activities.

ORV restrictions would have both short- and long-term positive impacts to vegetation by limiting surface disturbances.

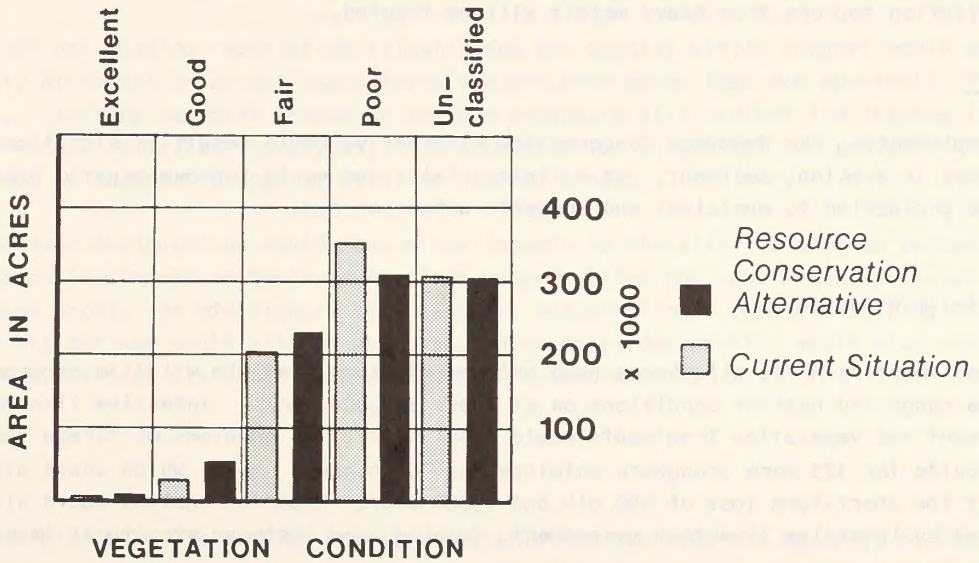


Figure 3-1. Long—term changes in vegetation condition under the Resource Conservation Alternative.

Summary

In the long term, the overall type and productivity of forage species on public lands would improve slightly under this alternative. Properly placing and designing improvement projects could lessen some of the possibly adverse impacts to vegetation.

Soils and Water

Erosion, sediment, and salt yields would be reduced by implementing vegetation treatments, water control structures, and aquatic and riparian improvements in the planning area. The location of the treatments and the treated acreage or miles would primarily determine the magnitude of these impacts.

Properly implemented grazing systems that adhere to adequate rest cycles during periods of critical soil moisture and critical plant phenology and proper use restrictions would help reduce erosion, sediment, and salinity yields on those sites.

The increases in visitor use brought about by designating areas as wilderness may result in a slight increase in erosion rates on trails and campsites as well as decreased water quality (sediment yield and bacterial contamination). Due to some protection from mineral development, wilderness designation would have long-term positive impacts to soils and water.

Roads associated with timber harvest, even those properly laid out and constructed, would result in short-term increases in erosion rates and sediment yield. The degree of this impact will vary with the size of the timber harvests.

Continued protection of the Boulder Gulch watershed near Silverton, Colorado, and the ground-water aquifers associated with the Dry Creek Basin and Uravan domestic and municipal wells are necessary to protect the water quality.

After conducting an inventory in the Upper Animas River drainage, 20 acid drainage and pollution sources from heavy metals will be treated.

Summary

Implementing the Resource Conservation Alternative would result in significant decreases in erosion, sediment, and salinity yields and would improve aquatic habitat and provide protection to municipal and domestic water sources.

Terrestrial Wildlife

implementing AMPs, wild horse herd management plans, and the wildlife program would improve range and habitat conditions on at least 701,000 acres. Intensive livestock management and vegetation treatments would resolve existing problems of forage shortages and provide for 125 more pronghorn antelope and 300 bighorn sheep, which would also prevent the short-term loss of 890 elk and 1,000 deer. Riparian habitat would also be improved by intensive livestock management, fencing, and instream structural improvements.

As many as 5,700 acres would be treated under wildlife program funding with minimally negative impacts to nongame species. As many as 8 stream miles of riparian habitat would

be improved with structures and protective fencing (5 miles under the wild horse program). Water development would improve 3,200 acres of wildlife habitat.

Bald eagles would benefit from habitat protection. Additional winter concentration areas would receive protective management. Recovery and reestablishment of peregrine falcons would be assisted by continued releases. State T&E species recovery program would be assisted by the provision and improvement of potential habitat for river otters. Other T&E species would be protected and managed consistent with existing laws and regulations. Sensitive and nongame species habitat would be improved along with improving the general range condition and emphasizing riparian habitat management.

Lands disposal and conversion to private ownership and possibly developing lands would eliminate 2 percent of existing wildlife habitat and 3 1/4 miles of riparian habitat. Riparian losses would likely be significant because of limited availability of this habitat type and high potential for improvements on some tracts. Crucial winter range impacts are minimal (40 acres). Significant negative impacts to bighorn sheep habitat near Placerville could result in the loss of winter range for the remaining bighorn populations in the area. Potential conflicts with T&E species habitat would have to be resolved. Disposals could add to significant cumulative impacts to big game migration routes between Durango and Bayfield (120 acres).

Forestry program actions could cause significant losses of nongame species habitat as could range program vegetation treatments if sales or treatments occur in the limited amount of old growth pinyon-juniper habitat. Commercially harvesting timber in ponderosa pine, spruce-fir, and aspen types would not have significant impacts to wildlife habitat since BLM lands in the region contain a small fraction of these habitat types.

Upland and riparian habitat deterioration could be expected to occur on allotments not covered by AMPs where licensing livestock exceeds estimated carrying capacity. Most significant impacts are to riparian habitat.

Improving the vegetation through both wildlife and range programs could enhance recreation opportunities associated with hunting and wildlife viewing.

Oil and gas leasing restrictive stipulations (on crucial winter ranges) would apply to slightly different areas and approximately 8,000 more acres than are currently protected. Limiting seasonal access or surface occupancy will protect the lessees from potential Federal wildlife violations, reduce destruction of habitat and prevent disturbances on seasonally crucial wildlife habitat areas.

Wilderness designations would have minor impacts to the wildlife program because the wilderness nonimpairment criteria would limit opportunities for vegetation manipulations within those areas. An additional, but presently unquantifiable impact resulting from increased visitor use could also be expected. Wilderness designation would also protect wildlife habitat from disturbances associated with development.

Summary

Terrestrial wildlife habitat conditions should improve over the majority of the planning area due to more intensive management of wildlife habitat, livestock, watershed areas, vegetation treatments and habitat protection in WSAs. River otters, bald eagles

and peregrine falcons should benefit from provided protection. Land disposal could cause minimal losses of big game winter ranges and riparian habitat. Big game populations would remain stable over the long term (similar to impacts listed under the Current Management Alternative).

Aquatic and Riparian Wildlife

Beneficial impacts would occur from range management activities due to the incorporation of aquatic and riparian objectives into AMPs; however, until they are completed, it is expected that a downward trend in habitat quality will continue. There should be positive impacts on those streams which have been intensively monitored (124 miles) through coordinated activity planning and monitoring. The remaining 280 plus miles of uninventoried streams could potentially be improved through similarly coordinated activity planning. This potential may only be determined after further inventories and(or) monitoring to determine the current habitat condition.

Wildlife management direction will positively affect aquatic and riparian habitat through substantial expenditures for aquatic and riparian habitat improvements. Additional monitoring will be required to determine habitat quality for those streams not inventoried.

Some beneficial impacts to recreation would result from the increased public awareness and support from the CDOW in implementing the aquatic and riparian habitat improvements associated with the Dolores and San Miguel rivers. Some short-term impacts will occur on aquatic and riparian habitat due to constructing recreation facilities in the Dolores River area. In addition, there may be some adverse impacts due to increased fisherman use.

Some adverse impacts are expected as a result of increased public use in the wilderness areas but are currently unquantifiable. Wilderness designation would also affect constructing aquatic and riparian habitat improvements, as no mechanical equipment would be allowed in these areas. Nonimpairing types of habitat improvements may still occur; therefore, these adverse impacts are expected to be minimal.

In specific areas such as Dry Creek, there may be continued degradation of riparian habitat quality due to grazing resulting in significant impacts to water quality, erosion, and sedimentation.

Due to road construction and timber sale layout in the forestry resource, short-term impacts will occur to water and habitat quality. However, these impacts should be insignificant in the long term since they will be mitigated on a case-by-case basis through coordinated activity planning.

It is expected that erosion and salinity management practices will result in overall long-term positive impacts to the aquatic and riparian habitat resource.

Summary

Positive impacts to 250 miles of aquatic and riparian habitat will be realized from livestock grazing, wildlife, recreation, and soils, and water activities.

Livestock Grazing

Under this alternative, an initial reduction of 29,062 AUMs is proposed in livestock grazing, which would result in a decrease of 45 percent of the current active preference (see Glossary). These initial adjustments are necessary to help achieve the management actions developed for each allotment in the "I" Category (see Appendix 9-D). Appendix 9-E displays the recommended change in AUMs for all allotments.

In the long term, a reduction of 21,072 AUMs from current active preference is proposed, depending largely on implementing grazing systems, installing range improvements, and completing land treatments proposed under this alternative. Table 3-2 summarizes the short- and long-term changes proposed in current active preference.

Table 3-2. Changes in Grazing Use Under the Resource Conservation Alternative.

Grazing use	Total AUMs	Change in use AUMs	%
Current active preference	64,232	-	-
Initial adjustment	35,170	-29,062	-45
Long-term adjustment	43,160	-21,072	-33

Source: BLM Data 1984

This alternative would have impacts to livestock grazing in both the short and long term. When nonuse is taken into account for 1980 through 1982, the reductions from average actual use amount to 15,181 AUMs in the short term and 7,191 AUMs in the long term. This nonuse would be a portion of the initial downward adjustment proposed in this alternative. The short- and long-term impacts to each livestock operation would vary according to how grazing use in the allotment fits into the yearlong ranch operation. Increases or decreases of more than 15 percent of current authorized use would be phased in over a five-year period. Even with the phase-in period considered, this alternative would force operators to either secure alternative pasture or forage and(or) to reduce herd size.

Wilderness designation would not have any significant impacts to livestock grazing. Wild horse use could have adverse impacts as far as meeting AMP objectives (BLM needs to incorporate adequate rest schedules and facilities).

Summary

The short- and long-term impacts to livestock management are partly mitigated by the nonuse that has typically occurred; however, there would be a significant monetary loss to livestock operators due to lowered livestock production in both the short and long term.

Except for phasing in AUM reductions over a five-year period, little can be done to mitigate the adverse impacts this would have on livestock operators.

Wild Horses

Both the Spring Creek and Naturita Ridge herd areas (which include 75 and 50 head, respectively) would be managed for wild horses. Due to forage competition, livestock grazing would be reduced or discontinued. Big game use of the areas would continue but would not be significant in the short or long term.

The sex ratio and age class structure would be monitored to maintain a healthy viable breeding population. If populations were allowed to increase, based on monitoring of forage condition and trend, the utilization level would be limited to moderate (50% of current annual growth) and a healthy herd would be maintained.

Population reductions by live trapping and distribution through the adoption program would cause minor, short-term disruptions of normal wild horse habits and behavior. In the short term, the horses culled for adoption would be the least desirable in conformation, color, and other genetic traits, but in the long term, the result would be genetically higher quality breeding populations and adoptable horses.

Wilderness designation could have potential long-term impacts to the Spring Creek herd area by limiting the management techniques and facilities in the eastern portion of the area. Increased visitor use could have adverse impacts to wild horses, but in the long term could be mitigated through wilderness management plans.

Watershed treatments projected in the Spring Creek area would have positive short- and long-term impacts on the wild horses by increasing vegetation densities, productivity, and available forage.

Summary

In the short and long term, wild horse populations would be maintained at healthy, viable levels in both areas. Vegetation would be maintained or improved in the long term and would enhance wild horses.

Wilderness designation could affect wild horses both positively and negatively in the long term.

Forestry

Vegetation treatments of forested land by range and wildlife would result in little or no impacts to forestry.

Areas with special recreation values will be withdrawn from timber and woodland production and include Silverton, the Dolores River, Lemon Dam and Vallecito Lake and Menefee and Weber mountains. Wood fiber production loss as a result of these withdrawals is approximately 300 thousand board feet (MBF) each year. When looking at the total timber and woodland production for the region, a yearly loss of 300 MBF is insignificant.

Although no harvesting is allowed in the WSA, the available forest land will remain in the sustained yield base until the area has been designated as a wilderness. If all areas were designated wilderness, this would result in a wood fiber production loss of 190 cords per year (95 MBF). This impact would affect all WSAs except the Dolores River Canyon and McKenna Peak WSAs. These losses are not significant.

Road and pad construction as a result of mineral activities can have beneficial and adverse impacts. The loss of production and improved access are so minimal that the impacts are not significant.

Production loss as a result of protecting cultural resource sites is insignificant.

Land disposal actions could reduce the BLM commercial timber base by 1 percent and result in an insignificant production loss of 112 MBF per year. The woodland base could be reduced by 10 percent with a production loss of 106 cords per year, not significant impacts.

Placing commercial forest under intensive management should result in future yields that are double the existing unmanaged stand yields. Timber yield increases associated with the small BLM timber base is insignificant when compared with total timber production for this region. Placing the woodland species under management is significant because, for the first time, the woodland base is recognized as a legitimate resource and will be managed for a sustained yield of wood fiber.

Summary

Total forest production loss associated with existing and proposed management action could be 446 MBF per year (896 cords per year). When compared with the yearly demand of 35 million board feet (MMBF) expected and anticipated timber production by private, State, and other Federal agencies, this loss is insignificant. Placing the woodland base under management is significant in the long term because lack of management could eventually result in the elimination of the woodland resource.

Recreation

Certain livestock management practices could have some negative impacts to public experiences in the Dolores River SRMA. Most impacts could be mitigated through season-of-use adjustments and practices in those areas managed for their primitive and semiprimitive nonmotorized opportunities.

Wildlife management would have positive impacts to recreation activity and opportunities by increased viewing, hunting, and fishing. In the long term, there would be an increase in these opportunities within wildlife management areas. The introduction of bighorn sheep and river otters and aquatic habitat improvements in the Dolores SRMA will increase recreation setting and activity opportunities.

Wilderness recommendations would have both long-term positive and negative impacts to recreation and would eliminate historic motorized use within all wilderness areas.

These losses would not be significant. Designation would provide increased opportunities for wilderness recreation in a variety of settings and ecotypes which are atypical of existing wilderness. Implementing permit systems could adversely affect numbers of visitors or visitor preferences.

Continuing existing mineral development restrictions within the Dolores SRMA would have long-term, positive impacts to the recreation resources by maintaining the settings most desired by the public.

Cultural resources management could have long-term, negative impacts to recreation resources in some areas by limiting historic motorized use in locations desired by the public. These restrictions will eliminate specific activity and opportunity settings and will be difficult to manage and enforce.

The disposal of the Indian Springs site would have short- and long-term positive impacts to recreation. Unless the site is disposed of or extensive management efforts are initiated, overuse during hunting seasons will destroy the site. There are possibilities of CDOW management coordinated with their Young property administration.

Wild horse management would have a long-term positive impacts to recreation by increasing opportunities for horse viewing and interpretation.

The continuation of forest management restrictions within the SRMAs would have long-term positive impacts to recreation resources.

Soils and water improvements could have positive impacts to recreation in the long term by positively affecting user experiences through water quality improvements.

Summary

Protecting and enhancing recreation resources by management and development restrictions would have long-term, positive impacts to recreation and overall would continue to provide the settings and opportunities most desired by the public. Wilderness designation would have both positive and negative, long-term impacts to recreation opportunities and settings.

Cultural Resources

(Note: Impacts to sites affected by each alternative are not cumulative. In many cases, the same site may be affected by several actions. The estimated numbers are based upon site densities projected from Class II and Class III survey data (see Glossary). The Class II survey data indicated a strong reliance on environmental variables, such as distance from water, soil type and depth, elevation, and slope.)

General restrictive management for all eight WSAs will have long-term positive impacts to a large number of cultural sites (approx. 2,400 acres). These beneficial impacts will be due primarily to reductions in vandalism because of decreased access,

which could be somewhat offset by increases in foot and horse travel due to increased visitor use. Beneficial impacts will be especially significant in the Cahone, Cross, Squaw/Papoose and the Dolores River canyons and the Tabeguache Creek areas. Research restrictions and interpretation will be more difficult due to access restrictions associated with the WSAs.

Avoidance measures will be used on the 6,500 acres of vegetation treatments which will be maintained. A possibility exists for inadvertent permanent damage to 400 archaeologic and historic sites. The extent of impacts will depend upon the adequacy of cultural resource inventory and the nature of avoidance measures. The method of treatment will vary how significant the impacts are (anywhere from low to moderate). Close supervision will keep impact levels low.

Inadvertent impacts may occur to approximately 13 sites from the new vegetation treatment proposed (200 acres); however, close supervision and adequate inventory data will keep impact levels low.

Decreases in livestock grazing will have slight positive effects to an unknown number of sites from reductions in trampling. AMPs will have positive effects to cultural sites from planned livestock avoidance of high site density areas. Some negative impacts may occur due to livestock concentrated in pastures. A strong inventory base and closely monitoring identified, sensitive sites will reduce these effects.

Net beneficial impacts will result from the educational aspects and visibility of the Anasazi Heritage Center. Losses could occur if budgeting were low and funds were taken away from on-the-ground resource protection and use.

Major long-term, positive impacts will result from CRMP development and increases in operating budgets for approximately 1,200 sites within the Mockingbird, Cannonball, Hamilton, and Cow mesas, Dolores Cave, Lowry, Painted Hand, and Dominguez-Escalante ruins, Sand, Bull, East Rock, and Squaw/Papoose canyons, Indian Henry's Cabin, McLean Basin, Painted Hand Petroglyphs, and Tabeguache Pueblo areas. As a result of CRMPs and increases in funding for implementation, stabilization will prevent structural deterioration, patrol will prevent damage from vandalism, and inventory and mapping will provide for more efficient and effective protection and use of these significant sites and areas.

Managing 45,000 acres in the Silverton SRMA will likely have long-term advantages for more than 50 historic and archaeologic sites. Cooperative CRMPs should be developed to channel visitors and provide for site protection and visitor safety. No significant impacts are expected from SRMA management for the Silverton area. Road closures will have more significant, positive effects on site protection. ORV planning in this area will likely have long-term benefits pertaining to vandalism reduction on approximately 40 nistoric and archaeologic sites.

Managing for visitor use on the Dolores River SRMA will channel visitors away from fragile sites to some degree, which will likely have long-term positive impacts to approximately 40 archaeologic and historic sites. Visitors will be provided with an educational experience here, related to the unique cultural values found along the Dolores River corridor. Vandalism may be reduced by developing CRMPs for sites attracting recreation users.

Disposing of 18,000 acres of public lands will have no significant impacts to archaeologic, sacred, or historic sites. All impacts will be avoided or mitigated with Class III (intensive) surveys and data recovery if needed.

Managing 78,000 acres to reduce erosion and sediment yield will have net positive impacts to 25 archaeologic and historic sites over the long term. Erosion control measures, which could be significant if they are targeted to cultural resources protection, may prevent loss of all or portions of these sites. Additional inventory will be needed to identify program strategies and needs. There is a low likelihood that inadvertent damage to approximately 360 archaeologic and historic sites may occur if adequate inventories are not done and monitoring levels are low.

Managing 30,000 acres for salinity control may have permanent impacts to 117 archaeologic and historic sites. These would result from inadvertent activity related to project installation and will be greatly reduced by adequate inventories and close supervision of construction. However, most of the projects will be in low site density areas.

With 3,690 acres per decade of commercial and noncommercial forest product sales, there is a moderate likelihood that 40 sites will suffer some form of permanent damage. This will not be significant if adequate inventory data are accumulated to provide for their avoidance (and possibly mitigation) and if close supervision of the timber sales is undertaken. Inadvertent impacts will likely occur in some cases where increases in access will bring vandals to the sites. These impacts are not expected to be high for the proposed acreages as they lie in low site density areas.

A high probability of permanent damage to approximately 2,700 sites will continue from public sales (estimated at 1,000 cords/yr). Damage to cultural values from unsupervised, on-demand woodcutting is not quantifiable due to a lack of sufficient site-specific inventory data. Significant impacts are likely occurring due to the concentration of the noncommercial activities in high site density areas (west of Cortez and Disappointment ridges). Many of the areas are not inventoried due to low personnel levels and stipulations which are not monitored for compliance, which greatly increases the level of impacts.

Improving aquatic areas will reduce erosion which may have beneficial effects on a low number of cultural values. Impacts from project installation will be avoided. Some inadvertent damage to a low number of sites may occur but will not be significant if adequate inventories are done and construction is carefully monitored.

Habitat improvements via plowing, burning, and seeding (with some oak crushing) on 5,700 acres may have permanent effects on approximately 98 archaeologic and historic sites. These habitat improvements are proposed in low site density areas, however, and all surface-disturbing treatments will be inventoried and impacts avoided or mitigated. With large land treatments, however, some inadvertent damage may occur. These impacts could be significant unless close monitoring of the project and an adequate amount of inventory are done.

Continuing oil and gas and CO_2 operations will have permanent effects on 14,000 archaeologic and historic sites. Site-specific impacts will be avoided or mitigated

on a case-by-case basis. However, significant impacts to sites will continue to occur (especially with no increased patrolling and monitoring) from increases in access which brings about increases in vandalism, especially evident in high site density areas such as the Sacred Mountain area and parts of the Disappointment Valley and the Paradox areas. New operations will increase the current levels of impacts. Site-specific inventories as a result of the high levels of energy development have had a positive effect on the data base for available cultural information in the San Juan Resource Area and have aided significantly in managing and protecting 700 cultural sites. However, net impacts of this development are still negative.

Managing 19,800 acres of DOE lease tracts may have permanent low levels of impacts to approximately 450 archaeologic and historic sites. Site-specific avoidance measures will protect sites from direct impacts on a case-by-case basis. Inadvertent damage may occur due to low levels of monitoring and inventory personnel.

Hard rock mining operations under 3809 regulations (currently 4,500 acres) may have permanent effects on approximately 175 archaeologic and historic sites. Due to low levels of monitoring, inadvertent damage to sites in the Disappointment Valley and Paradox areas is occurring. Direct impacts are being avoided in most cases, but some sites are damaged due to lack of inventory because of low personnel levels. Damage to sites in the Silverton area is unknown but is likely to be low.

The 880 acres of sand and gravel operations which will be managed under this alternative may have permanent impacts to approximately 20 archaeologic and historic sites. These sites may be inadvertently damaged due to gravel operations increasing their visibility. Vandalism may occur in high site density areas. Impacts will be lessened by increased supervision and monitoring of all operations.

Managing 32,000 additional acres of coal leases in the Hay Gulch/Cherry Creek area will have low levels of permanent impacts to approximately 100 historic and archaeologic sites. This development is predominantly in a low site density area. Because of the underground mining techniques employed, the low site density, and avoidance and data recovery methods, significant impacts are not expected. Some damage may occur from subsidence but this can be considered during inventory and evaluation stages and measures can be taken to reduce the chances of impacts.

Summary

The Resource Conservation Alternative contains the most beneficial impacts to cultural resources, which is due to decreases in access due to wilderness and intensive recreation management. Developing CRMPs will enhance, over time, a large number of significant sites. Project developments will include cultural resources protection in their planning and development stages, which will provide more protection for important sites. Mineral operations will have detrimental effects to cultural values from inadvertent damage where this development occurs in high site density areas. Information gathered from project inventories will enable better management of all cultural resources.

Visual Resources

Approximately 50 percent of the important landscapes are not identified in the Resource Conservation Alternative for special visual management, VRM Class I or II. This could result in construction project design with visual contrast levels in excess of what would be required to maintain the scenic quality (see Appendix 2 for details).

All other areas of scenery with important landscapes would receive VRM Class I or II management, which would tend to maintain visual resources over approximately 50 percent of the planning area.

Wilderness

Nonmotorized recreation users would have increased opportunities for solitude and primitive recreation.

The reintroduction of bighorn sheep and river otters in the Dolores River Canyon WSA would enhance wilderness values. Wild horses would be protected in a natural environment in the McKenna Peak WSA. Wild horse viewing would be a supplemental value to users.

Withdrawing the WSAs from future mining and mineral leasing would protect and preserve their wilderness values for future generations. All of the WSAs have mineral values which have valid existing rights associated with their pre-FLPMA mining claims or leases. The wilderness values could be significantly affected by their development and subsequent surface disturbance as a result of these rights. All WSAs have these rights; however, the highest potential for development appears to be in Cahone, Cross, and Squaw/Papoose canyons. These valid existing mineral rights would make future management difficult. The development of the valid existing rights could cause irreversible and irretrievable losses of the wilderness resources.

Disposing of public land and ROWs would not be allowed and would enhance the natural values found in the WSAs.

Wilderness values in Tabeguache Creek and Cahone, Cross, and Squaw/Papoose canyons (WSAs) would be enhanced by closing cherrystemmed roads and ways to motorized use.

Diversity within the NWPS would be enhanced (see the Ecological Representation Subalternative for details). The ecological systems of Dolores River Canyon, McKenna Peak, Cross Canyon, and Weber Mountain WSAs are not presently well represented in the NWPS.

All eight of the WSAs are manageable as far as the effects of topography, vegetation, and other land use will limit future conflicts. The foremost manageability question is the conflict of the mineral values present in the WSAs.

Due to possible development of minerals and pre-FLPMA oil and gas leases (within KGS), managing Cross, Cahone, and Squaw/Papoose canyons (WSAs) as wilderness could be considered doubtful. Possible development of minerals and pre-FLPMA oil and gas leases (not in the KGS) in Weber and Menefee mountains (WSAs) could cause future management problems but to a lesser degree than in Cross, Cahone and Squaw/Papoose canyons (WSAs).

Dolores River Canyon WSA is deemed manageable as wilderness due primarily to its extreme topographic limitations. Tabeguache Creek and McKenna Peak WSAs would be manageable as wilderness since mining claims are minimal and pre-FLPMA oil & gas leases are either nonexistent or minimal.

Summary

The protection of wilderness values would generally enhance natural values associated with the WSAs. Diversity in the NWPS would be expanded and supplemental values would be protected or enhanced. Pre-FLPMA mineral rights could be developed and cause irreversible and irretrievable losses of the wilderness resources.

Lands

Designating the eight WSAs as wilderness would result in decreased opportunities for ROWs and authorizations on public land. Particularly in Squaw/Papoose, Cross, and Cahone canyons, a combination of significant energy development (CO_2 and oil and gas from the McElmo Dome) and topographic limitations (steep canyons) dictate a high demand for energy-related ROWs. However, formally designating wilderness areas would preclude any roads, pipelines, or powerlines from being constructed with the exception of ROWs associated with pre-FLPMA mineral rights. Instead, such facilities would need to be located outside of wilderness areas--this means rerouting around the wilderness areas, often avoiding the public lands entirely. Such rerouting is a feasible alternative in most cases, but it does cost more for the applicant (typically, the energy development company), and such costs are passed on to the consumer. Economic impacts cannot be quantified except on a case-by-case basis but are expected to be significant.

Consolidating public lands through disposing of small, isolated parcels of public land that are difficult and uneconomical to manage will improve the efficiency of land use authorizations by BLM. Under this alternative, 1.8 percent of the public land would be disposed of and(or) consolidated.

Fire

Additional wildfire limited suppression areas will be identified and managed in a similar manner as the present Paradox Limited Suppression Plan is being managed. Limited suppression usually results in additional acres being burned and more usable livestock forage and wildlife habitat. Fire protection and suppression costs should decrease within limited suppression areas.

Increased fire suppression costs could occur where vegetation treatments change vegetation types from brush to grass resulting in more flash fuels and a greater spread rate for fires.

No significant impacts from wilderness designation would occur to the fire program due to low fire occurrence and sparse fuels.

Disposing of isolated parcels of public land would reduce fire protection and suppression program costs. Isolated parcels require more efforts in fire initial attacks

because doubts usually exist about ownership. But fires need to be suppressed to protect surrounding private lands.

Increased fire protection and suppression cost can be associated with most forestry practices due to changes in fire spread rates and creation of slash.

Economics

The Resource Conservation Alternative projects BLM investments of $1.9 million over a ten-year period with emphasis on stabilizing range condition, fishery improvement, and recreation access by an increased number of tourists. This level of investment and emphasis would result in annual gains of approximately $9 million in 1994 and $10 million in 2000 in increased total personal income within the planning area.

Under this alternative, the livestock grazing program is expected to spend approximately $780,000 for range and wildlife habitat improvements and $650,000 for soils and water improvements. Resulting improvements in wildlife habitat should sustain current levels of hunting revenue.. Aquatic habitat improvement expenditures of approximately $473,000 may be expected to raise fishing revenue in the planning area.

Management emphasis on recreation opportunities, wilderness values, and access to archaeologic resources should increase annual tourist expenditures by $7.5 million by 1994. The value of oil and gas production is expected to remain stable at approximately $6.7 million annually due to decreased management emphasis.

Table 3-3 compares the economic effects of the Resource Conservation Alternative to the baseline projections for 1994 and 2000. It illustrates expected changes in population, employment, per capita income, and total personal income brought about by projected levels of hunting, grazing, fishing, tourism, and oil and gas activities.

BLM management of public land is shown in Table 3-3 to cause less than a one percent change in any economic indicator when viewing the total planning area. No significant impacts are projected within any economic sector of the individual counties within the planning area. However, a 400- to 500-person increase in population is projected to occur in Montezuma and La Plata counties due to increased levels of tourism by 1994. Social consequences are expected to be inconsequential given the minimal extent of economic changes.

Summary

The Resource Conservation Alternative projects BLM investments of $1.9 million with management emphasis on stabilizing range condition, wildlife habitat and fishery improvements, and recreation access by an increased number of tourists. A 400- to 500-person increase in population is projected in Montezuma and La Plata counties due to increased levels of tourism. No significant impacts are projected within any economic sector within the planning area.

Table 3-3. Economic Impacts of the Resource Conservation Alternative.

Income sources	Population		Employment		Per capita income (1983 dollars)		Total personal income - (thousands of 1983 dollars)	
	1994	2000	1994	2000	1994	2000	1994	2000
Hunting	0	0	0	0	0	0	0	0
Grazing	4	4	1	1	0	0	9	10
Fishing	4	3	104	107	-5	-5	1,715	1,883
Tourism	857	756	394	407	-11	-12	7,672	8,317
Oil & Gas	0	0	0	0	0	0	0	0
Subtotal	865	763	499	515	-16	-17	9,396	10,210
Baseline	107,913	121,768	53,178	59,657	10,339	10,245	1,115,744	1,247,538
Total	108,778	122,531	53,677	60,172	10,323	10,228	1,125,140	1,257,748
Percent Change	0.8	0.6	0.9	0.8	0.0	0.0	0.8	0.8

Note: See Appendix 8 for methodology.
Source: BLM Data 1984.

No Grazing Subalternative

Introduction

This subalternative is necessary to provide essential baseline information to compare against the environmental impacts of all alternatives which involve grazing and is needed to permit full and fair consideration of nonlivestock management options. Short-term impacts are assessed at 20 years; long-term impacts are assessed at 100 years.

Vegetation

Under this alternative, vegetation could undergo changes in species composition that would improve vegetation condition towards climax communities. Some poor vegetation

condition sites could improve to fair while some fair condition sites could improve to good vegetation condition. Because of limitations in soils, precipitation, and present species composition, some plant communities would probably not improve through natural processes. Increased ground cover and litter accumulation could be projected in the long term. No significant impacts to T&E plants are anticipated.

Soils and Water

Livestock impacts such as compaction, reduced litter and organic matter, and deterioration of root structure would decrease. However, areas of accelerated deterioration, such as degraded meadows which are presently gullied and are headcutting, would probably not recover through natural processes.

No significant impacts to water quantity would occur as a result of this alternative. An overall improvement in water quality could be projected due to removing livestock and subsequent revegetation of riparian areas.

Wild Horses

Wild horses would benefit in the short and long term due to an increased quality and quantity of vegetation available for use.

Wildlife (Terrestrial and Aquatic)

Under this alternative, all existing and potential conflicts could be eliminated. As vegetation condition improved toward climax, wildlife species which favor lower successional stage plant communities could decline, while species favoring higher successional stages could increase over the long term.

Big game habitat conditions would be initially enhanced and could lead to increased population levels. Eliminating livestock grazing could remove a major means of maintaining subclimax successional stages. Consequently, in the long term, as vegetation composition changed, big game populations could slowly decline. Aquatic species would be enhanced due to decreased stream bank erosion and increased bank cover. This alternative would have no significant impacts to T&E wildlife species.

Livestock Grazing

Livestock use (64,232 AUMs) would be lost in both the short and long term. While eliminating livestock grazing in the planning area would have adverse impacts to the livestock operators, the impacts to the regional economy and population levels would be less severe. BLM grazing privileges contribute less than 5 percent of the total regional demand and constitute insignificant impacts to the regional economic and population levels.

Woodland Products

Twenty-four thousand acres of woodland formerly maintained in treatments for livestock would be available for intensive woodland management.

Recreation

Hunting opportunities for big game would increase initially and gradually decline. Hunting opportunities for nongame species and birds could increase in the long term. Regeneration of natural vegetation would enhance natural scenic quality.

Cultural Resources

This alternative could benefit cultural resources because all site trampling by livestock would be eliminated.

Wilderness

Wilderness values (i.e., solitude, naturalness, etc.) could be preserved with overall positive impacts due to removing most of man's influences associated with livestock grazing.

Ecological Representation Subalternative

Introduction

The Ecological Representation Subalternative was developed primarily to study and analyze the need and potential of the WSAs to contribute to expanding the diversity of the NWPS. In this alternative, Cross Canyon, Dolores River Canyon, McKenna Peak, and Weber Mountain WSAs would be recommended suitable for wilderness designation, using the Wilderness Manageability Alternative boundaries as described in the Wilderness Technical Supplement. Cahone Canyon, Menefee Mountain, Squaw/Papoose Canyon, and Tabeguache Creek WSAs would be recommended nonsuitable for wilderness designation; the proposed management of these areas is described under the Preferred Alternative in the Wilderness Technical Supplement.

The following resources have no significant impacts or are previously discussed in the Resource Conservation Alternative--livestock grazing, forestry, visual resources, fire, and economics.

Energy and Minerals

Designating the four WSAs as wilderness would have the following impacts to mineral resources (see Table 3-1 for potential resources within the WSAs).

Withdrawing potential coal resources within Weber Mountain WSA would result in a loss of approximately 33 million tons, which represents approximately 6 percent of the total estimated reserves in the Durango KRCRA (from Mesa Verde National Park to Hesperus). Impacts would be for the long term.

Withdrawing oil and gas leasing in the four WSAs would result in a possible loss of 2.4 million barrels of oil, 5.6 billion cubic feet of gas, and some potential unknown losses of CO_2. No reserves have been included for McKenna Peak WSA because it was determined that low potential exists for these resources (oil and gas and CO_2). Impacts would be for the long term.

Withdrawing from future mineral entry by wilderness designation would greatly affect mineral development in the Cross Canyon and Dolores River Canyon WSAs, as Cross Canyon WSA has a high favorability for occurrence of uranium and vanadium mineralization and Dolores River Canyon WSA has a high favorability for occurrence of base and precious metals, as well as uranium and vanadium in the Chinle Formation. The greatest long-term impacts would be from designating the Cross Canyon WSA as wilderness. Exploration drilling by Western Nuclear, Inc., has indicated that a uranium ore body possibly extends into this WSA.

Designating these four WSAs as wilderness could preclude developing the leasable and locatable minerals, with the exception of pre-FLPMA leases or pre-FLPMA claims with a valid discovery.

Nondesignating the four WSAs as wilderness (see the Preferred Alternative discussion) will have the following impacts to the mineral resources.

No leasing of coal resources within Menefee Mountain WSA would result in a loss of approximately 62 million tons, which represents approximately 6.5 percent of the total estimated reserves in the Durango KRCRA. Impacts would be for the long term.

No leasing or no-surface occupancy leasing for oil and gas in the four WSAs would result in a possible loss of 3.3 million barrels of oil, 2.7 billion cubic feet of gas, and 4.2 billion cubic feet of CO_2. Some of this loss could be mitigated by directional drilling outside of Cahone Canyon and Squaw/Papoose Canyon WSAs. No reserves have been included for Tabeguache Creek WSA because it was determined that low potential exists for these resources (oil and gas and CO_2). Impacts would be for the long term.

All four WSAs would remain open to mineral entry, which would beneficially affect the Squaw/Papoose Canyon WSA because of its high favorability for occurrence of uranium and vanadium mineralization. Pre-FLPMA leases could still be developed for three of the WSAs. Tabeguache Creek WSA has no pre-FLPMA leases and 560 acres would be withdrawn from mineral entry and designated as an Outstanding Natural Area.

Summary

For those four WSAs recommended suitable for wilderness designation, adverse impacts to minerals are the future withdrawals from mineral entry and mineral leasing of oil and gas and CO_2 and coal, with the exception of pre-FLPMA leases and pre-FLPMA mining claims with a valid discovery. All impacts would be for the long term.

For those four WSAs recommended nonsuitable for wilderness designation, significant, adverse impacts (all for the long term) to minerals are: no mineral leasing of oil and gas, CO_2 and coal, with the exception of pre-FLPMA leases. These areas will remain open to mineral entry, a beneficial impact.

Vegetation

Wilderness designation of the four WSAs would have long-term, positive impacts to vegetation, as it would afford some protection from impacts associated with mineral development. Some negative impacts to vegetation could occur within the four WSAs recommended as nonsuitable for wilderness designation, since these areas would remain open to mineral entry and possible mineral development.

Soils and Water

Wilderness designation of the four WSAs would have long-term, positive impacts to soils and water; this would afford some protection from impacts associated with mineral development. Some negative impacts to soils and water could occur within the four WSAs recommended as nonsuitable for wilderness designation, since these areas would remain open to mineral entry and possible mineral development.

Terrestrial Wildlife

Wilderness designation of the four WSAs would have long-term positive impacts to undeveloped wildlife habitat. Nonwilderness designation of four WSAs could result in road development and habitat loss associated with locatable mining activities.

Aquatic Wildlife

Wilderness designation of Cross Canyon WSA could adversely affect constructing aquatic and riparian habitat improvements as no mechanized or mechanical equipment would be allowed. Nonimpairing types of habitat improvements could still occur; thus, these impacts would be minimal. Otherwise, no significant impacts would occur.

Wild Horses

Wilderness designation of McKenna Peak WSA could have potential, long-term impacts to the Spring Creek herd by limiting the management techniques and facilities in the eastern portion of the wild horse area. There are no wild horses in the other seven WSAs; thus, there would be no impacts.

Recreation

Wilderness designation of the four WSAs would have both positive and negative impacts to recreation. Designation would provide significantly increased opportunities for wilderness types of recreation in a variety of settings and ecotypes which are atypical of existing wilderness. Some motorized recreation use would be foregone, but this would not be significant.

Nonwilderness designation of four WSAs could adversely affect the primitive recreation experience as a result of road development and landscape alteration associated with locatable mining activities. Some motorized recreation use would be foregone, but this would not be significant.

Lands

Impacts to lands associated with wilderness designation for four WSAs would be essentially the same as those described under the Resource Conservation Alternative, but to a lesser degree. There would be no significant impacts to the WSAs recommended nonsuitable for wilderness designation.

Cultural Resources

Wilderness designation of four WSAs would have long-term, positive impacts to cultural resources due primarily to reductions in vandalism because of decreased vehicle access. Beneficial impacts will be especially significant in Cross Canyon and Dolores River Canyon WSAs.

Nonwilderness designation of four WSAs, because they would be closed to ORV use, would have positive impacts to cultural resources. Beneficial impacts will be especially significant for Cahone Canyon, Squaw/Papoose Canyon, and Tabeguache Creek WSAs. However, nondesignation of these WSAs could allow increased development activities through locatable minerals; thus, increased vehicle access could adversely affect cultural sites due to increased vandalism.

Wilderness

Wilderness designation of the four WSAs (Cross Canyon, Dolores River Canyon, McKenna Peak, and Weber Mountain) would in the short term, and especially the long term, protect and preserve the wilderness values of these areas. In addition, they would add greatly to the diversity of the NWPS. Their contribution as wilderness resources are of local, regional, and national significance.

Cross Canyon WSA is associated with deep canyon topography in the pinyon-juniper woodland and Great Basin sagebrush of the Colorado Plateau Province. Currently, there are no designated wilderness areas which include a representation of the Great Basin sagebrush. There are presently only two designated wilderness areas in the NWPS (and both in Colorado) containing the pinyon-juniper vegetation type: Black Canyon of the Gunnison and Mesa Verde Wilderness Areas, totaling less than 20,000 acres. Mesa Verde's wilderness area is not open to public use and the Black Canyon of the Gunnison has limited access due to nearly vertical canyon walls; accessible primarily to climbers and parachutists. Therefore, Cross Canyon WSA would be an extremely important addition to the NWPS by filling a current ecological void. Additionally, its supplemental values (Anasazi ruins and artifacts and aquatic and terrestrial wildlife habitat) would make this area, in combination with its ecological community, a culturally significant and unique addition to the wilderness system. There is no potential wilderness area within the Colorado Plateau Province which includes the same combination of ecological and supplemental values, with the exception of Squaw/Papoose Canyon and Cahone Canyon WSAs.

Dolores River Canyon WSA is associated with steep-walled, deep canyon topography in the pinyon-juniper woodland and Great Basin sagebrush of the Colorado Plateau Province. Ecologically, as described above for Cross Canyon, this area would fill a present void in the NWPS. The supplemental values of the Dolores River Canyon WSA (cultural and historic features, geologic features, wildlife habitat, and sensitive plant species), in combination with its ecological community, would present an impressive and unique addition to

the wilderness system. There is no potential wilderness area currently under study that includes the same combination of ecological and supplemental values.

McKenna Peak WSA is an extremely rugged badlands-type topography in a transitional zone between the Colorado Plateau and Rocky Mountain Forest provinces. It includes three primary vegetation types--saltbush-greasewood, mountain mahogany-oak scrub, and pinyon-juniper woodland. Presently, there is only one designated wilderness area that contains a representation of the saltbush-greasewood vegetation type--Great Sand Dunes National Monument in Colorado, which contains approximately 18,000 acres within its wilderness area. Within the NWPS, only one area contains a representation of the mountain mahogany-oak scrub vegetation type; Lone Peak Wilderness in Utah, which contains approximately 30,000 acres. Ecologically, McKenna Peak WSA would add greatly to the geographic distribution of vegetation types not presently well represented in the NWPS. The supplemental values of McKenna Peak WSA (containing a wild horse herd, fossils, geologic features, and winter wildlife habitat), in combination with its ecological community, would present a different and unique addition to the wilderness system. There is no potential wilderness area currently under study that includes the same combination of ecological and supplemental values.

Weber Mountain WSA is associated with mountain topography in a transition zone between the Colorado Plateau and Rocky Mountain Forest provinces and includes two primary vegetation types--pinyon-juniper woodland and mountain mahogany-oak scrub. As described above for McKenna Peak WSA, mountain mahogany-oak scrub is not well represented either in acreage or geographically within the NWPS. The supplemental values of Weber Mountain WSA (cultural features, winter wildlife habitat, and nearness to Mesa Verde National Park), in combination with its ecological community, would present a unique natural environment to the NWPS. There is no potential wilderness area currently under study that includes the same combination of ecological and supplemental values, with the exception of Menefee Mountain WSA.

The impacts of improving the diversity of the NWPS by designating these four areas as wilderness would be beneficial.

Wilderness designation would benefit nonmotorized recreation users by increasing opportunities for solitude and primitive recreation and offering a different season-of-use than the high mountain wilderness areas of the San Juan Mountains in southwestern Colorado.

With the exception of pre-FLPMA valid existing mineral rights, prohibiting future mining and mineral leasing would protect and preserve the wilderness values for future generations.

Disposing of public land and impairing ROWs would not be allowed and would thus protect the values of the wilderness resource.

All four of the WSAs are manageable as wilderness as far as topography and vegetation resources. If the pre-FLPMA leases in Cross Canyon WSA are developed, managing the area as wilderness would be doubtful. Possibly developing pre-FLPMA leases in Weber Mountain WSA could cause future management problems but to a lesser degree than in Cross Canyon WSA. The Dolores River Canyon WSA is deemed manageable as wilderness due primarily to its extreme topographic limitation. McKenna Peak WSA would be manageable as wilderness since mining claims and pre-FLPMA oil and gas leases are minimal.

Nonwilderness designation of the four WSAs (Cahone Canyon, Menefee Mountain, Squaw/Papoose Canyon, and Tabeguache Creek) would result in the loss of wilderness values for the long term.

The ability of these areas to add to the present diversity of the NWPS would be foregone; however, it is felt that by recommending Cross Canyon, Dolores River Canyon, McKenna Peak, and Weber Mountain WSAs suitable as wilderness, plus recommending Tabeguache Creek WSA as an Outstanding Natural Area (560 acres would be withdrawn from mineral entry), those impacts to ecological diversity and supplemental values would be reduced. However, there would still be a long-term loss of ecological systems and supplemental values of these specific areas.

Harvesting forestry products would not be encouraged on the nonsuitable WSAs; however, limited impacts to wilderness values could occur due to removing wood products.

Mineral development could occur in these four areas as they would remain open to mineral entry (with the exception of 560 acres of Tabeguache Creek Canyon WSA). If development occurred, there would be adverse impacts to the wilderness resources, which would be long-term, irreversible and irretrievable impacts to the wilderness resources.

The WSAs recommended nonsuitable would receive VRM Class II management protection during ROW construction, which does not preclude developing ROWs which could adversely affect wilderness values.

Summary

For those WSAs recommended suitable for wilderness designation (Cross Canyon, Dolores River Canyon, McKenna Peak, and Weber Mountain), there would be both short- and long-term beneficial impacts to the wilderness resource by preserving the natural values, outstanding opportunities for solitude and primitive recreation, and expanding the diversity in the NWPS.

For those WSAs recommended nonsuitable for wilderness designation (Cahone Canyon, Menefee Mountain, Squaw/Papoose Canyon, and Tabeguache Creek), there would be long-term, irreversible and irretrievable impacts to the wilderness values due primarily to possible mineral development and(or) ROW construction. This would be considered a permanent loss of a significant natural resource.

Resource Utilization Alternative

Introduction

This alternative emphasizes mineral exploration and development, livestock grazing use and land disposal, although multiple uses would continue. Resource values contributing to local and regional economy would be favored.

Energy and Minerals

The impacts to wildlife, travel restrictions, and cultural impacts under this alternative are similar to the Resource Conservation Alternative.

No-surface occupancy stipulations imposed on the Dolores River Canyon and Tabeguache Creek WSAs would result in 32,280 acres unavailable for oil and gas exploration, development, and production (2.5% of planning area). Tabeguache Creek WSA has low potential for oil and gas production.

The Dolores River Canyon WSA is estimated as having potential gas reserves of 4.2 billion cubic feet. Not allowing exploration, development, and production would result in a potential loss of this resource and impacts would be for the long term.

Disposing of public lands (and reserving the minerals to the Federal government) will result in 33,000 additional acres of split estate management, adding approximately 11 percent more split estate lands than currently exist. Impacts would be for the long term.

Federal coal available for exploration and development would exist on 1,880 acres in the East Cortez KRCRA, 1,480 acres in the Nucla KRCRA, and 54,000 acres in the Durango KRCRA. Additional sand and gravel resources would be available on Ewing Mesa to help meet the demand in the Durango area.

Summary

The significant impact of this alternative is the no-surface occupancy designation of the Dolores River Canyon WSA, which could result in a potential loss of 4.2 billion cubic feet of gas reserves.

Vegetation

The only significant short-term impacts to vegetation that would occur are projected increases in the vigor of preferred forage plants, where livestock reductions would result in lowered levels of utilization.

Impacts to vegetation would be similar to those listed under the Resource Conservation Alternative, except with more intensive management a substantial number of sites would be converted from poor to fair condition and from fair to good condition (Fig. 3-2 projects expected changes in vegetation condition in the long term).

Proposed range improvements and treatments would be necessary to implement management actions and would have positive impacts to vegetation. Many of these projected improvements would lead to improved livestock distribution and the production of better quality and quantity of forage. Additional forage may be produced as a result of timber and woodland harvesting. Proposed watershed improvement and wildlife treatments would have long-term positive impacts to vegetation. Increased vegetation densities, productivity, and available forage will result from the proposed treatments.

In the long term, removing horses from the two herd areas would beneficially affect vegetation densities, reproduction, and productivity, causing an increase in forage available for livestock and big game use in both the short and long term.

Summary

In the long term, the overall types and productivity of forage species produced on public lands would improve under this alternative. Properly placing and designing improvement projects could lessen some of the possibly adverse impacts to vegetation.

Soils and Water

Most impacts to soils and water are similar to those listed under the Resource Conservation Alternative. Opportunities for soils and water management in the WSAs would exist. Development potential resulting from nonwilderness designation for WSAs could result in accelerated erosion and impacts to water quality such as higher sediment yields.

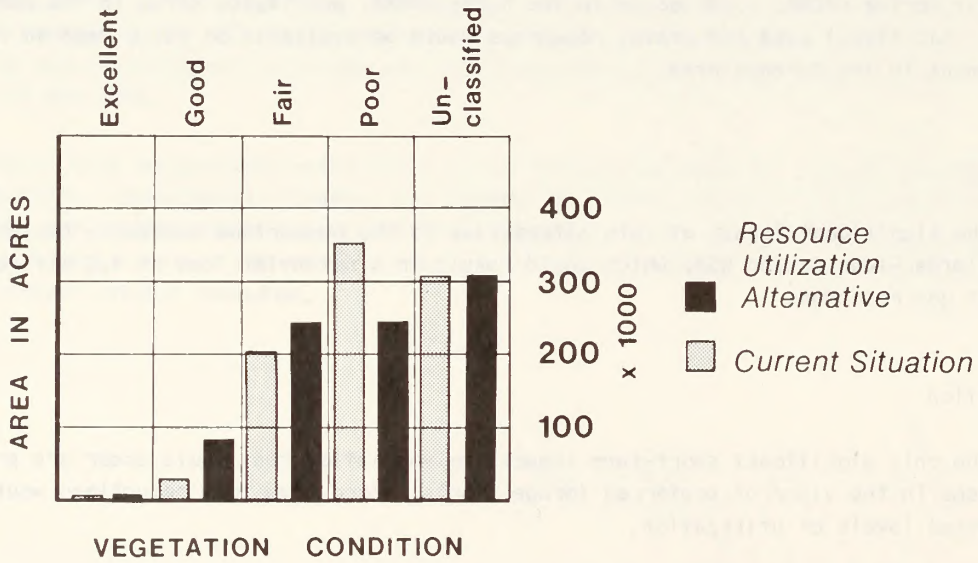


Figure 3-2. Long-term changes in vegetation condition under the Resource Utilization Alternative.

Summary

Implementing the Resource Utilization Alternative would result in decreases in erosion, sediment, and salinity yields and would provide protection for domestic and municipal water sources.

Terrestrial Wildlife

Most impacts to terrestrial wildlife are similar to those listed under the Resource Conservation Alternative. Implementing AMPs and the wildlife program and removing wild horses would improve range and habitat condition on 850,000 acres. Big game populations would increase by 4,000 deer, 1,400 elk, 325 pronghorn antelope, and 500 bighorn sheep due to improvements in forage production.

As much as 27,450 acres would be treated under wildlife program funding; 5,600 acres of this would be new chainings that could cause significant impacts to nongame species. Approximately 2 miles of riparian habitat would be improved with instream structures. Water development would improve 9,600 acres of habitat.

Land disposal would eliminate 3 percent of existing wildlife habitat and 12.75 miles of riparian habitat. Riparian habitat losses would be significant because of limited availability of the habitat type and high potential for improvements on some tracts. Crucial big game winter range losses (on 1,560 acres) would be locally significant and cumulative with coal development near Cortez and private land development. Land disposal would reduce options for coal development mitigation and would likely increase mitigation costs. Approximately 1,080 acres within big game migration routes between Durango and Bayfield would be lost, adding to significant impacts to private land development and proposed sand and gravel mining.

Coal leasing in the East Cortez KRCRA in conjunction with private land development and public land disposal could cause locally significant reductions of deer and elk.

Sand and gravel sales on Ewing Mesa could have locally significant impacts to deer and elk winter habitat and migration routes. The development of private land and coal, sand, and gravel mining all compound these impacts.

Total deer and elk population losses due to the minerals and lands program are estimated at 900 deer and 300 elk and would occur between Cortez, Dolores, Mancos, and east of Durango.

Nondesignation of WSAs as wilderness would result in some long-term degradation of wildlife habitat due to access in presently undisturbed areas. The potential would exist for conflicts between mining, ORVs and bighorn sheep.

Summary

Terrestrial wildlife habitat conditions should improve over the majority of the area due to more intensive management of wildlife habitat, livestock, and watershed areas. Habitat improvement should increase big game herds. River otters, bald eagles, and peregrine falcons should benefit from provided protection. Coal mining near Cortez and land disposal could cause losses of locally important big game and riparian habitat.

Aquatic and Riparian Wildlife

Impacts due to range management activities will be similar to those described under the Resource Conservation Alternative. However, beneficial impacts will be realized to a greater degree due to the increased number of AMPs to be implemented in this alternative. Some continued deterioration of habitat quality is expected to occur until AMPs are effectively implemented.

Wildlife management activities are expected to have significant, positive impacts to at least 400 miles of aquatic and riparian habitat and will generally improve the quality of the fishery resource within the area. Additional inventories need to be conducted on uninventoried streams.

Impacts resulting from recreation and forestry management and soils and water activities will be similar in nature to those noted under the Resource Conservation Alternative.

Depending on mine plans and locations, the potential exists for increased impacts to aquatic and riparian habitat in mineral development areas. Although impacts are unquantifiable at this time, they may be assessed after reviewing operational plans for mining or activity plans for the resource on case-by-case bases. Many of these significant impacts are expected to be mitigated under current regulations.

Impacts in specific areas due to wild horse utilization may be assessed only after activity plans are developed and monitoring studies have been implemented. However, with recommended herd removal under this alternative, no significant impacts are anticipated to the aquatic and riparian resources.

Summary

Livestock grazing, wildlife, recreation, and soils and water management activities should all have significant, long-term beneficial impacts to 400 miles of aquatic and riparian habitat, once activity plans are implemented.

Livestock Grazing

Under this alternative, an initial reduction of 19,819 AUMs is proposed in livestock grazing; changes would result in a decrease of 31 percent of the current active preference. These initial adjustments are needed to help achieve the management actions developed for each allotment in the "I" Category (see Appendix 9-D). Appendix 9-E displays the recommended changes in AUMs for all allotments.

The short-term impacts to livestock grazing are mitigated partially because during the 1980 through 1982 grazing seasons, nonuse has amounted to 13,881 AUMs and would be a portion of the initial downward adjustment proposed in this alternative. The impacts would therefore be somewhat mitigated since the net reduction from recent actual use would be approximately 5,938 AUMs.

In the long term, 90,109 AUMs would be made available for livestock use (or increase of 29 percent of current active preference). This projected increase of livestock forage is dependent on implementing grazing systems, installing range improvements, and establishing land treatments to increase forage productivity, improve distribution patterns, and convert potentially suitable sites to suitable (see Table 3-4 for initial and long-term changes proposed in current active preference).

Table 3-4. Changes in Grazing Use:
Resource Utilization Alternative.

Grazing Use	Total AUMs	Net change AUMs	Percent
Current active preference	64,232	--	--
Initial adjustment	44,413	19,819	-31
Long-term adjustment	90,109	25,877	+29

Source: BLM Data 1984

The impacts to each livestock operator would vary according to how grazing use in the allotment fits into the yearlong ranch operation. Increases or decreases of more than 15 percent of current authorized use would normally be phased in over a five-year period, thus allowing the operator to secure alternative pasture or forage and(or) to reduce herd size.

Summary

Short-term impacts to livestock grazing are partly mitigated by the nonuse that has typically occurred; however, there would be a loss to livestock operators because of lowered livestock production.

In the long term, livestock operations should realize gains through significant increases in livestock production. Through proper mitigation, most potentially adverse impacts to livestock grazing could be avoided.

Wild Horses

Under this alternative, wild horses would be removed from both the Spring Creek and Naturita Ridge herd areas. In the short and long term, wild horses would be removed from the natural ecological system and would not be available for public viewing.

In the long term, removing horses would beneficially affect vegetation densities, reproduction, and productivity. There would be an increase in forage available for livestock and big game use in both the short and long term.

Summary

Wild horses would be removed and would not be available for public viewing in the short and long term.

Forestry

Range maintenance of existing chaining reduces the potential woodland production by eradicating young pinyon-juniper stands. Since this acreage is not part of the woodland base, these actions would have no impacts to the sustained yield harvest level. Chaining of mature pinyon-juniper will reduce the sustained yield base. Range will chain 5,700 acres of pinyon-juniper in the planning decade, which will reduce the woodland base by 13 percent and result in a production loss of 172 cords per year over the long term.

Burning existing chaining for wildlife habitat improvement will reduce the potential woodland production. Since this acreage is not part of the woodland base, these actions would have no impacts to the sustained yield harvest level. Burning and crushing stagnated oak stands can eventually result in species and growth more favorable to forestry. These impacts are not significant. Chaining and burning of mature pinyon-juniper will reduce the sustained yield base.

The wildlife program proposes to chain or burn 6,850 acres of pinyon-juniper in the planning decade, which will reduce the woodland base by 16 percent and result in a production loss of 207 cords per year over the long term. Assuming these treatments continue, the woodland base could be reduced over the long term.

Areas with special recreation values, including Silverton and the Dolores River, are withdrawn from timber and woodland production. Wood fiber production loss as a result of these withdrawals is approximately 112 MBF each year. When looking at the total timber and woodland production for the region, a yearly loss of 112 MBF is insignificant.

Land disposal actions could reduce the commercial timber base by 3 percent and result in a production loss of 248 MBF per year. The woodland base could be reduced by 11 percent with a production loss of 136 cords per year. These are not significant impacts.

Placing commercial forest under intensive management should result in future yields that are double the existing unmanaged stand yields. Timber yield increases associated with the small BLM timber base is insignificant when compared with total timber production for this region. Placing the woodland species under management is significant because, for the first time, the woodland base is recognized as a legitimate resource and will be managed for a sustained yield of wood fiber.

Summary

Total forest production loss associated with existing and proposed management actions could be 68 MBF per year (1,236 cords/yr). When compared with the expected yearly demand of 35 MMBF and anticipated timber production by private, State and Federal agencies, this loss is insignificant. Vegetative treatment by range, wildlife and land disposal actions could reduce the woodland sustained yield base by 40 percent in the planning decade. Two additional decades of similar treatments could eliminate the woodland base.

Recreation

Livestock grazing, cultural resources, mineral, land disposal, forestry, and soils and water impacts would be similar to those listed under the Resource Conservation Alternative. Wildlife management impacts would be similar to those listed under the Resource Conservation Alternative, except with an increase of 15,000 user days.

Removing wild horses would have long-term negative impacts to recreation by eliminating viewing and interpretation opportunities.

Summary

Protecting and enhancing recreation resources by management and development restrictions would have long-term, positive impacts to recreation. Since no WSAs would be recommended for wilderness, the need for those recreation settings and opportunities would continue.

Cultural Resources

Not designating any of the eight WSAs may have permanent effects on an undetermined number of archaeologic and historic sites. If no access restrictions are imposed, many sites will be vandalized, assuming that there are no increases in patrol. ORV closures on Squaw/Papoose, Cahone and Cross canyons and Tabeguache Creek WSAs will somewhat reduce these impacts. Impacts to the Dolores River Canyon WSA due to recreation uses will still occur and these may be significant.

Increases in livestock grazing and AMPs will likely have permanent effects on an unknown number of archaeologic and historic sites, unless mitigation measures are implemented. Increases in livestock numbers will affect sites via trampling, especially in high site density areas and near water sources. Additional measures will need to be taken to fence sites and redistribute livestock to avoid damaging significant cultural values. Intensive inventories near major water sources would be needed to monitor and assess damages. If these types of avoidance measures are taken, no significant impacts will occur.

Maintaining 23,800 acres of vegetation treatments may permanently damage 1,500 archaeologic and historic sites to some degree. Avoidance measures will be undertaken via stipulations and inventories. Some inadvertent damage may result due to dense concentration of sites, especially in the Sacred Mountain area. Adequate inventory levels and closely monitoring treatments will be necessary to avoid significant impacts to these sites.

The 28,000 acres of new proposed vegetation treatment may have permanent impacts to 1,750 archaeologic and historic sites. Avoidance of sites via adequate inventories and stipulations will ensure that direct impacts are avoided. Some impacts can be expected from increases in access into remote areas and inadvertent damage during treatment; however, increases in monitoring and treatment supervision will keep these impact levels low.

CRMP development and increases in operating budgets will have major, long-term positive impacts to approximately 1,430 sites within Dolores Cave, Bull, Sand and East Rock canyons, Indian Henry's Cabin, McLean Basin, Hamilton and Mockingbird mesas, Painted Hand Petroglyphs, Cannonball, Lowry, Escalante/Dominguez, and Painted Hand ruins, Tabeguache Pueblo, and Cahone, Squaw/Papoose canyon, Cross and Dolores River canyons, and Tabeguache Creek areas. As a result of CRMPs and increases in funding for implementation, stabilization to prevent structural deterioration, patrol to prevent vandalism, and inventory and mapping will provide for more efficient and effective protection and use of these important areas.

Managing the Silverton and Dolores River SRMAs will likely have long-term advantages for more than 90 archaeologic and historic sites. Cooperative CRMPs should be developed to channel visitors and provide for site protection and visitor safety. No significant impacts are expected from SRMA management for the Silverton area, although management will be significant for the Dolores River corridor. Road closures will have impacts through reducing levels of vandalism and visitor access.

Encouraging commercial use on the Dolores River will likely have permanent effects on approximately 15 archaeologic and historic sites. Emphasis on more use will increase inadvertent impacts and vandalism to cultural sites, especially those near major campsites and access points, which could result in significant impacts unless patrol efforts or monitoring levels are increased as well. Planning for visitor control in these areas will also reduce the chances of impacts to these sites. Adequate inventories are currently lacking to properly assess damage extents.

Improving access roads and visitor facilities will have permanent effects on an unknown number of archaeologic and historic sites. Access upgrading has significant impacts to sites due to increases in vandalism if not monitored closely. These impacts will be greater in the Sacred Mountain area where sites are dense or in the Dolores River corridor where visitors are confined. There will be less impacts in the Silverton area but these impacts may remain significant if a corresponding increase in patrol is not implemented. There is also a significant lack of inventory data for the Silverton area; therefore, impacts are difficult to assess.

Interpreting cultural sites for recreation will likely have positive long-term benefits. Public attention and education involving cultural resources will reduce vandalism. For all areas, these are significant, positive impacts.

Disposing 33,000 acres of public lands will have no significant impacts to archaeologic, sacred, or historic sites. All impacts will be avoided or mitigated with Class III surveys and data recovery if needed.

Managing 50,000 acres in the Disappointment Valley and Dry Creek areas to reduce erosion and sedimentation may have permanent impacts to 156 archaeologic sites. Inadvertent damage can be expected but with monitoring and adequate inventory data, these impacts should not be significant.

Managing 17,000 acres for salinity control may have permanent impacts to 65 archaeologic and historic sites. These would result from inadvertent activity related to project installation and will be greatly reduced with adequate inventories and closely supervising construction. Most of the projects will be in low site density areas.

Developing watershed management plans will likely have long-term, positive impacts to an unknown number of archaeologic and historic sites. Through management plans, effects on some sites from erosion can be avoided or mitigated before information loss occurs. These impacts are probably not significant over the short term but could be over the long term.

Reclaiming streams where acid problems exist in the Upper Animas River drainage may result in permanent damage to one or two historic sites; however, the damage potential is low and would result from inadvertent actions. Inventories will help avoid direct impacts.

With 4,760 acres per decade of commercial and noncommercial sales, there is a moderate likelihood that 52 archaeologic and historic sites will suffer some form of permanent damage. This will not be significant if adequate inventory data are accumulated to provide for their avoidance and possible mitigation and if close supervision of the timber sales is undertaken. Inadvertent impacts will likely occur in some cases where increases in access will bring vandals to the sites--impacts that are not expected to be high for the proposed acreages as they lie in low site density areas. Impacts from noncommercial wood cutting are similar to those listed under the Resource Conservation Alternative.

Impacts from aquatic improvements will be similar to those impacts listed under the Resource Conservation Alternative.

Habitat improvements via plowing, burning, and seeding (with some oak crushing) on 27,450 acres may have permanent effects on approximately 472 archaeologic and historic sites. These habitat improvements are proposed in low site density areas, however, and all surface-disturbing treatments will be inventoried and impacts avoided or mitigated. With large land treatments, however, some inadvertent damage may occur. These impacts could be significant unless close monitoring of the project and an adequate amount of inventory are done.

Oil and gas recovery will increase levels of impact and sites to 15,000 sites. These impacts that will be permanent and highly probable. Site-specific direct impacts will be avoided or mitigated on case-by-case bases. However, significant impacts to sites will continue to occur from increases in access which brings vandals to the sites, especially evident in high site density areas such as the Sacred Mountain and parts of the Disappointment Valley and Paradox areas. With no increases in patrol and monitoring, these will continue to be significant impacts. Site-specific inventories as a result of the high levels of energy development have had positive effects on the data base for cultural resources information in the planning area, which has aided significantly in managing and protecting 700 cultural sites. However, net impacts of this development are still negative.

Impacts to cultural resources from DOE lease tracts and hard rock mining would be similar to those listed under the Resource Conservation Alternative.

Continued sand and gravel operations (800 acres) and expanding gravel operation on Ewing Mesa (another 1,200 acres) will have permanent impacts to approximately 30 archaeologic and historic sites. Five to seven sites would require data recovery with no

significant impacts. Approximately 25 sites will suffer impacts due to accessibility and visibility; increased levels of monitoring or total data recovery would reduce or eliminate these impacts.

Coal leasing and development of 1,480 acres near Nucla and 1,880 acres at East Cortez will affect approximately 150 sites. Since this would be a strip mining operation, data recovery on all sites may need to be undertaken; no adverse impacts would occur but data recovery would be costly.

Coal leasing on 54,000 acres in the Durango KRCRA may have permanent impacts to 330 archaeologic and historic sites. Since most mining here will be underground, impacts will be primarily from increased access for mining activity, which brings increases in vandalism and from subsidence. Inadvertent loss should be minimal. More attention to avoidance and data recovery should be given to areas with high potential for subsidence and sites near access roads and mine portals. Site-specific inventories will be necessary. Much of this land is private surface and will require coordination with the landowners for access to do inventory and evaluation and any other cultural resources work that is needed.

Summary

The Resource Utilization Alternative has the most potential for adverse effects to cultural values from the standpoint of project impacts. Developing CRMPs will reduce these impacts for a small percentage of sites. Increases in recreation and range planning will benefit cultural resources and reduce damage from livestock grazing and uncontrolled visitation. Some cultural areas could be developed for recreation use. Increases in access will significantly damage cultural resources in high site density areas such as the Sacred Mountain and Disappointment areas. Increases in vegetation treatments will have significant impacts to cultural resources unless monitoring and inventory work are relatively increased.

Visual Resources

Approximately 50% of important landscapes are not identified in the Resource Utilization Alternative for special visual management, VRM Class I or II. This could result in construction project design with visual contrast levels in excess of what would be required to maintain the scenic quality. Other areas with important landscapes would receive VRM Class I or II management, which would maintain visual resources on 45 percent of the planning area.

Wilderness

Some continued and(or) increased motor vehicle use could create damage to soils, vegetation, and natural values, which would be mainly focused in Weber and Menefee mountain and McKenna Peak WSAs. All other WSAs would be closed to ORV use.

Intensive livestock management could change the natural landscape in Cross Canyon WSA and portions of McKenna Peak WSA, long-term impacts that could be potential losses of wilderness values.

The limited timber and(or) forestry product harvesting could cause losses of wilderness values, which would mainly apply to Weber and Menefee Mountain WSAs.

Developing coal reserves in Weber and Menefee Mountain WSAs and the development of oil and gas, and CO_2 in Cross, Cahone, and Squaw/Papoose Canyon WSAs could result in losses of wilderness values associated with these areas in the long term. The other WSAs all have low to moderate potential for oil and gas and could also be developed in the future, resulting in long-term irreversible and irretrievable impacts to the wilderness resource.

Developing locatable minerals could destroy wilderness values by changing the natural landscape, resulting in losses of naturalness. Associated activities could further cause losses of primitive and unconfined recreation and solitude opportunities. This would be most probable in the Dolores River, Squaw/Papoose, and Cross canyons, McKenna Peak, and Tabeguache Creek WSAs. These could be long-term, irreversible and irretrievable impacts to the resource. Issuing ROWs associated with energy development could cause losses of wilderness values.

All of the WSAs have a moderate to high potential for wilderness values to be degraded to the point where they would no longer be suitable for wilderness designation. This would result in losses of primitive recreation opportunities, solitude, naturalness and diversity in the NWPS.

Summary

The Resource Utilization Alternative would generally cause the wilderness resource of all eight WSAs to be potentially degraded to the point that, over the long term, the wilderness values presently existing would be lost due to mineral, wildlife, livestock grazing, and lands actions. These could be irreversible and irretrievable impacts to the resource.

Lands

Consolidating public lands through disposing of small isolated parcels of public land will improve the efficiency of land use authorizations by BLM. This will result in a lower cost per unit of issuing authorizations and will reflect a savings in monitoring the construction and rehabilitation phases of projects on BLM lands. Under this alternative, 3.3 percent of the public lands would be disposed of and(or) consolidated.

Fire

Impacts would be similar to those listed under the Resource Conservation Alternative. More pinyon-juniper and brush acreage being manipulated could result in larger wildfires because of greater potential for spread through continuous flash type of fuels.

Economics

BLM investments of $4.1 million over a ten-year period with management emphasis on all resources except wilderness will be projected under this alternative. These levels of

investments and management emphasis would result in annual gains of approximately $18 million in 1994 and $19 million in 2000 in increased total personal income within the planning area.

Investments of $1.5 million in range, $375,000 in soils and water, and $1 million in wildlife habitat projects would increase animal numbers and consequent revenue from grazing allocation and hunting. Fishery investments of 1.25 million dollars would result in increased revenue from recreational fishing. Revenue from tourism increases $7.5 million.

Oil and gas exploration and production on public lands reach their highest level under this alternative with a projected annual increase in 1994 of $15 million. (Table 3-5 compares economic effects of this alternative to baseline projections for 1994 and 2000). It illustrates expected changes in population, employment, per capita income, and total personal income brought about by projected levels of hunting, grazing, fishing, tourism, and oil and gas activities. BLM management of public land is shown in Table 3-5 to cause no greater than a 1.6 percent change in any economic indicator when viewing the total planning area. No significant impacts are projected within any economic sector under this alternative. However, a rise in per capita income of 1983 dollars will occur in Dolores County by 1994. Social changes are expected to be inconsequential given the minimal economic changes.

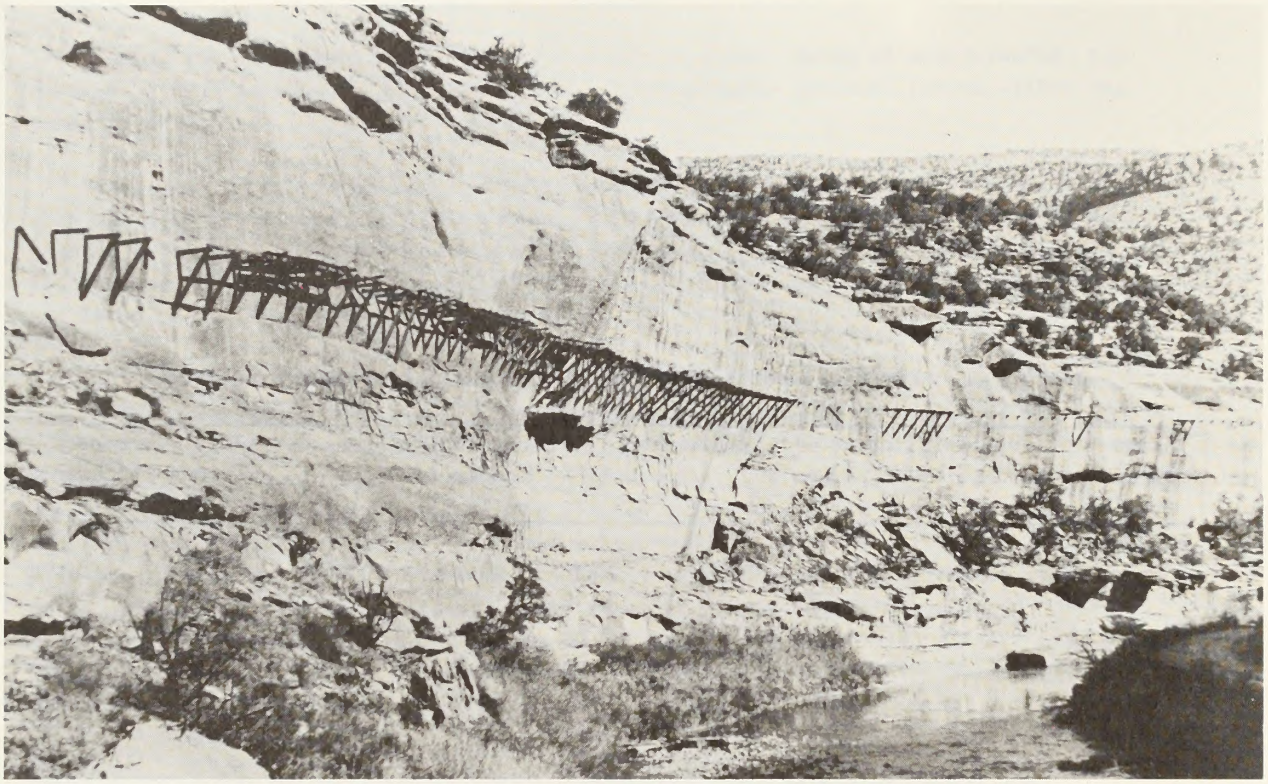
Summary

BLM management will result in increased revenues to the mineral and tourism activities; however, no significant impacts are projected within any economic sector within the planning area.

Table 3-5. Economic Impacts Under the Resource Utilization Alternative.

Income sources	Population		Employment		Per capita Income (1983 dollars)		Total personal Income (thousands of 1983 dollars)	
Year	1994	2000	1994	2000	1994	2000	1994	2000
Hunting	43	53	21	22	0	0	377	433
Grazing	20	21	6	5	-2	-1	48	55
Fishing	8	5	203	210	-10	-10	3,356	3,683
Tourism	857	956	394	407	-11	-12	7,672	8,317
Oil & Gas	493	501	220	223	10	10	6,269	6,440
Subtotal	1,421	1,536	844	867	-13	-13	17,722	18,929
Baseline	107,913	121,768	53,178	59,657	10,339	10,245	1,115,744	1,247,538
Total	109,334	123,304	54,022	60,524	10,326	10,232	1,133,466	1,266,467
Percent Change	1.3	1.26	1.6	1.5	0	0	1.6	1.5

Note: See Appendix 8 for methodology.
Source: BLM Data 1984.



THIS HANGING FLUME ALONG THE DOLORES RIVER CANYON WAS PLACED ON THE NATIONAL REGISTER OF HISTORICAL PLACES IN 1980 AND CLINGS TO THE CLIFF 150 FEET ABOVE THE RIVER.

Current Management Alternative

Introduction

This alternative reflects BLM's present management direction and policies and land use plan decisions. It was assumed that no major policy or funding changes would take place.

Energy and Minerals

Impacts affecting energy and minerals in the Current Management Alternative are from wildlife, recreation, cultural resources, and lands.

The no leasing and no-surface occupancy stipulations in effect for the Perins Peak and Paradox peregrine falcon eyries decrease oil and gas leasing development and production on 1,480 acres, per the current oil and gas umbrella EA. This will be a long-term impact on approximately 0.2 percent of the lands available for oil and gas leasing in the planning area.

The no-surface occupancy stipulation in effect for the Dolores River SRMA has decreased the area in which oil and gas exploration, development and production can be accomplished by 34,680 acres, per the current Sacred Mountain and San Miguel oil and gas umbrella EAs. The majority of this acreage is unavailable because of steep terrain and high construction costs and represents approximately 2.7 percent of the planning area.

No leasing and no-surface occupancy stipulations for cultural withdrawal areas have decreased available acreage for oil and gas leasing, exploration, development and production by 7,200 acres, per the current oil and gas umbrella EAs. This acreage represents approximately 0.6 percent of the planning area.

No mineral entry on cultural withdrawal areas has decreased available acreage for mining claim location, exploration and development by 4,360 acres, representing approximately 0.3 percent of the planning area. Impacts to sand and gravel development are similar to those impacts listed under the Resource Conservation Alternative.

Disposing of public lands (and reserving minerals to the Federal government) will result in 16,000 additional acres of split estate management, adding approximately 5.4 percent more lands on which the split estate situation must be dealt with.

Summary

The acreages involved in the Current Management Alternative are per existing MFPs, oil and gas umbrella EAs, withdrawals, and mandates in the case of land disposal. Acreage percentages involved in these categories are relatively small compared to the total planning area. Impacts are considered to be relatively insignificant.

Vegetation

Short-term impacts to vegetation would be a continuation of present trend; many of these changes are subtle and difficult to assess. However, there would probably be some undesirable changes in vegetation due to continued present grazing use levels.

Figure 3-3 illustrates the expected long-term changes in vegetation conditions. Over the long term, these conditions would remain static on sites within the planning area currently under intensive grazing management (11 existing AMPs; 304,000 acres).

Possibly significant impacts to vegetation would continue to occur on various sites throughout the remaining 633,000 acres currently being grazed by livestock and wildlife--impacts include a decline in vegetation densities, productivity, vigor, reproduction, and available forage. Declines in vegetation condition, especially in areas of significant competition for available forage between livestock and wildlife, are anticipated but unquantifiable. Preferred forage species in the Spring Creek wild horse herd area (approx. 20,000 acres) would continue to be overutilized by grazing animals and, with increased grazing pressure, would experience locally significant decreases in vegetation densities, vigor, reproduction, productivity, and available forage.

While additional forage for livestock and wildlife may be produced as a result of timber and woodland harvesting, it would not have a significant long-term impact on the total vegetation resource and use by grazing animals.

Existing limited fire suppression plans would affect vegetation resources in the long term by allowing more pinyon-juniper woodland and sagebrush acreage to burn naturally and be replaced with herbaceous vegetation.

Existing ORV restrictions would have both short- and long-term positive impacts to vegetation.

Increases in wild horse populations could have adverse impacts to vegetation in both the short and long term.

Summary

Current vegetation trends would continue in the short term. The overall type and productivity of forage species produced on public lands could decline over portions of the planning area in the long term. No irreversible or irretrievable commitments of vegetation are projected under this alternative.

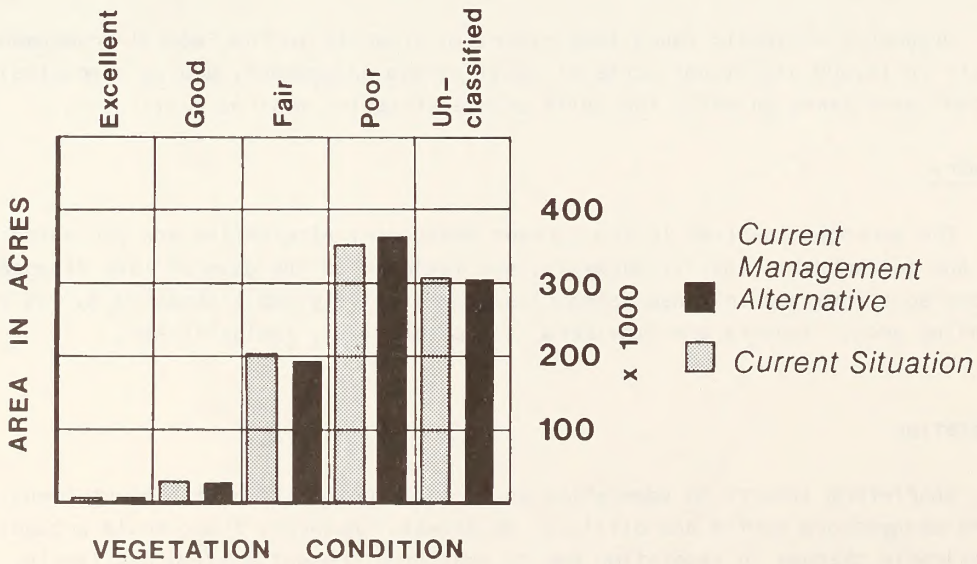


Figure 3-3. Long-term changes in vegetation condition under the Current Management Alternative.

Soils and Water

A continuation of the present livestock grazing practices throughout the planning area along with the heavy big game concentrations in Dry Creek Basin and Disappointment Valley would result in significant impacts to soils and water resources. Continued highly accelerated erosion rates and loss of soil productivity would occur. Accelerated sediment and salinity yields can be expected at approximately their present rates, resulting in off-site water quality impacts.

Roads associated with timber harvests, even properly placed and constructed, would result in short-term increases in erosion rates and sediment yields. The degree of these impacts will vary with the size of the timber harvests.

Continued protection of the Boulder Gulch watershed near Silverton, Colorado, and the ground-water aquifers associated with the Dry Creek Basin and Uravan domestic and municipal wells are necessary to protect the water quality.

Summary

Implementing the Current Management Alternative would result in highly accelerated erosion rates and sediment yields. Salt loading to the Colorado River from public land in the RMP area would continue at its present rate. There would be continued protection for domestic and municipal water sources.

Terrestrial Wildlife

Impacts of this alternative to the wildlife habitat are similar to those listed under the Resource Conservation Alternative, except that range and habitat condition could be expected to remain static or decrease in the long term. Reductions to elk and deer herds in the Disappointment Basin area (890 elk and 1,100 deer) would probably occur in the short and long term. Riparian habitat could not be expected to make substantial improvement since existing AMPs do not address riparian management objectives.

As many as 5,400 acres would be treated under the wildlife program with minimal impacts to nongame species habitat. No investments would be made in structural riparian improvements. Water development would not occur because of limited funding.

Recovery and reestablishing peregrine falcons would be aided by continued releases. Most bald eagle winter concentration areas would be protectively managed with seasonal oil and gas stipulations, but some conflict may remain in other areas. Other T&E species would be protected and managed consistent with existing laws and regulations. Sensitive and nongame species habitat would continue to deteriorate overall with decreasing range and riparian habitat condition.

Lands disposal would eliminate 1.6 percent of available wildlife habitat and approximately one-half mile of riparian habitat. Approximately 1,320 acres of big game crucial winter range would be lost. Big game migration routes between Durango and Bayfield would be negatively affected by disposing of 160 acres in conjunction with private land development. Oil and gas leasing restrictive stipulations would protect most of the deer and elk crucial winter ranges. Other crucial winter range areas are not protected, and conflict may exist with State and Federal wildlife law enforcement agencies over wildlife harrassment.

Weber and Menefee mountain WSAs would remain undeveloped as primitive areas, which would protect presently undisturbed wildlife habitat.

Summary

Terrestrial wildlife habitat would generally remain static or decline under this alternative. Big game populations would decline over the long term. Managing peregrine falcons, bald eagles, and T&E species would continue. Land disposal could have impacts to big game winter ranges, riparian habitat, and big game populations. Increases in wild horse populations will continue vegetation deterioration in these areas.

Aquatic and Riparian Wildlife

Potential for continued deterioration of those streams listed in Chapter Two exists, as well as an anticipated decline in habitat quality for those streams where no inventory data currently exist (approx. 275 mi).

The impacts of management activities pertaining to aquatic wildlife are unquantifiable at this time. Based on the current funding situation, there most likely will be a continued trend toward the habitat condition reflected in Chapter Two. Impacts to the remaining 275 miles of stream habitat are unquantifiable without further inventories and(or) monitoring.

Some short-term, minimal impacts may result from constructing recreation facilities, but no significant long-term adverse impacts are anticipated.

Impacts as a result of mineral development may only be assessed through further monitoring and developing operational plans. It is anticipated that where mineral activities are closely associated with aquatic and riparian habitat, the impacts should be, by regulatory standards, mitigatable and therefore minimal and assessed on case-by-case bases.

Significant impacts are not anticipated, since public land parcels containing potentially high value fisheries will retain public access. Quantifiable impacts will be assessed on case-by-case bases.

Summary

There will continue to be significant, adverse impacts to the aquatic and riparian resources. Those impacts associated with livestock grazing and aquatic wildlife management programs are due primarily to: (1) the continuation of the current situation within the range activity with a lack of effective AMPs causing a continued deterioration of those streams listed in Chapter Two; (2) the lack of any planned aquatic and riparian habitat improvements on approximately 140 inventoried stream miles; and (3) an inability to further inventory and(or) monitor the remaining 260 miles of aquatic and riparian habitat to determine habitat quality. No significant impacts are anticipated from recreation, wilderness, cultural resources, forestry and land disposal activities. However, mineral development may have long-term, significant impacts depending on where they are located and what types of mitigation can be included in mining operation plans. These impacts (from mineral development) are presently unquantifiable and can only be assessed on case-by-case bases, which may require additional monitoring.

Livestock Grazing

Under this alternative, no short- or long-term adjustments in AUMs are projected. Applications for nonuse, temporary nonrenewable use, and changes in season, class, or kind of livestock would be accepted and approved or disapproved on case-by-case bases. This alternative proposes no short-term changes in present management practices and has negligible impacts to livestock grazing.

Increases in wild horse populations could have significant adverse impacts on livestock grazing in both the short term and long term. Increased horse use will have significant, adverse effects on management objectives in the Dry Creek Basin, Disappointment and Naturita Ridge AMPs.

Summary

This alternative proposes no short-term or long-term adjustments in grazing preference. Livestock operators would realize no significant short- or long-term changes in grazing management or livestock production.

Wild Horses

Wild horse populations would increase on both the Spring Creek and Naturita Ridge areas. At the present reproduction rates, the populations could double in the short term. In both areas, potential competition for available forage will increase between wild horses, livestock, and big game as horse numbers increase. The overutilization of preferred forage plants is expected to occur in some degree in the short term and could become locally significant in the long term, especially in the Spring Creek area. Adjacent and intermingled private lands and State lands could be adversely affected in both the short and long term.

Spring Creek Area: In the short term, a noticeable change would probably be evident in the appearance and physical condition of the horses due to diet deficiencies. The horses would probably begin to expand their present range in search of adequate forage. In the long term, diet deficiencies would cause the reproduction rate to drop. The susceptibility to disease and death losses could result in herd reductions.

Without selective culling of the horses, chosen inbreeding would probably result, which would increase the probability of generating defective traits and producing inferior horses.

Naturita Ridge Area: In the long term, potential competition for forage between all grazing animals could result in conditions and situations similar to (but to a lesser degree) than those previously discussed in the Spring Creek area.

Summary

Wild horse populations could increase by 100 percent on both areas in 10 years. Adverse impacts would begin to become evident in the Spring Creek area in both the short term and would intensify in the long term. The Naturita Ridge area probably would be more stable in the short term but would have potential conflicts similar to (but of a lesser magnitude than) the Spring Creek area.

In both herd areas, adjacent and intermingled private and State lands could be adversely affected by horses in both the short and long term.

Forestry

Wildlife vegetation treatments will eradicate 2,000 acres of pinyon-juniper, which represents a potential production loss of 60 cords per year; by itself it is not significant.

Areas with special recreation values are withdrawn from timber and woodland production; including Silverton, the Dolores River, and Menefee and Weber Mountain areas. Wood fiber production loss as a result of these withdrawals is approximately 118 MBF each year. When looking at the total timber and woodland production for the region, a yearly loss of 118 MBF is insignificant.

Road and pad construction as a result of mineral activities can have beneficial and adverse impacts. The loss of production and improved access are so minimal that the impacts are not significant.

Land disposal actions could reduce the commercial timber base by 2 percent and result in an insignificant production loss.

Placing commercial forest under intensive management should result in future yields that are double the existing unmanaged stand yields. Timber yield increases associated with the small BLM timber base are insignificant when compared with total timber production for this region.

Summary

Total timber production loss associated with existing and proposed management actions could be 148 MBF per year (296 cords/yr). When compared with the expected yearly demand of 35 MMBF and anticipated timber production by private, State and other Federal agencies, this loss is insignificant.

Recreation

Livestock grazing, mineral development, land disposal, and forestry impacts would be similar to those listed under the Resource Conservation Alternative. Wildlife management impacts would be similar to those listed under the Resource Conservation Alternative except with negligible results. Under this alternative, bighorn sheep and river otters would not be introduced and aquatic improvements would be limited.

Summary

Protecting and enhancing recreation resources by management and development restrictions would have long-term positive impacts to recreation and overall would continue to provide the settings and opportunities most desired by the public and consistent with BLM's management objectives. The lack of wilderness designations would continue to affect the need for those recreation settings and ecotypes that are atypical of the NWPS.

Cultural Resources

If access is allowed into remote areas, damage to a large number of cultural sites from commercial pothunting will continue; impacts will be especially significant in the Bull, Squaw/Papoose, Cahone, Cross, and Dolores River canyons and Tabeguache Creek areas. Increases in patrol and inventory will be needed to offset this potential damage, because impacts are expected as access increases.

Most sites will be avoided by stipulations to livestock improvement projects. However, due to low supervision levels on Category "C" allotments, use may result in site damage and information loss to 1 to 2 sites per year. These impacts will depend on the significance of the particular site and could result in litigation regarding fines for trespassing and costly site mitigation. Maintaining 7,900 acres of vegetation treatments may result in permanent damage to 500 archaeologic and historic sites. Avoidance measures will be used via stipulations to all projects but inadvertent damage may occur. The methods of treatment will vary, bringing about zero to moderate impacts. A strong data base and close supervision during these treatments, especially chaining maintenance, will be necessary to avoid significant impacts.

Livestock grazing may do permanent damage to 40 or more cultural sites--trampling by repeated and concentrated livestock use does affect the cultural site surface material and information losses result. However, in most cases, these are not significant impacts; fencing some sites or redistributing livestock may be necessary to protect affected sites.

A net beneficial impact will result from the educational aspects and visibility of the Anasazi Heritage Center. Losses could occur if budgeting were low and funds were taken away from on-the-ground resource protection and use.

Current management at approximately 84 identified sites at Lowry and Escalante-Dominguez ruins, Cannonball Mesa, McLean Basin Towers, and Sand Canyon is not maintaining their needs. There is a high probability that long-term significant damage will continue; thus, more concentrated management is needed to avoid and mitigate impacts to these sites from visitation and natural forces. There have been positive, short-term impacts to these sites from fencing, recreation maintenance, stabilization, and monitoring.

Managing 45,000 acres in the Silverton SRMA will have the same impacts as those listed under the Resource Conservation Alternative. Cooperative CRMPs should be developed to channel visitors and provide for site protection and visitor safety. No significant impacts are expected from SRMA management for the Silverton area. Road closures will have more significant positive effects on site protection.

Visitor management and control on the Dolores River SRMA will channel visitors away from fragile sites which will likely have a long-term benefit on approximately 40 archaeologic and historic sites. Setting up the Special Recreation Area Management Plan will provide visitors with a cultural resources education by their viewing the unique cultural values along the Dolores River corridor. Vandalism may be reduced by developing CRMPs for sites attracting recreation users.

Current levels of recreation management on Weber and Menefee mountain areas have no significant impacts to approximately 10 sites located there. Some visitor interpretation and protection may be needed for these two areas if they are managed as primitive areas.

Disposing of 16,000 acres of public lands will have no significant impacts to archaeologic, sacred, or historic sites there. All impacts will be avoided or mitigated with Class III surveys and data recovery if needed.

Lack of soils and water management will permanently affect approximately 25 archaeologic and historic sites. A lack of erosion control results in the loss of all or portions of these sites, a significant impact.

Habitat improvements via plowing, burning, seeding, and some oak crushing on 5,400 acres may have permanent effects on approximately 93 archaeologic and historic sites. These habitat improvements are proposed in low site density areas, however, and all surface-disturbing treatments will be inventoried and impacts avoided or mitigated. With large land treatments, however, some inadvertent damage may occur. These impacts could be significant unless closely monitoring the project and an adequate amount of inventory data are collected.

With 1,980 acres per decade of commercial and noncommercial forest sales, there is a moderate likelihood that approximately 22 sites will suffer some form of permanent damage. This will not be significant if adequate inventory data are accumulated to provide for their avoidance and possibly mitigation and if close supervision of the timber sales is undertaken. In some cases, inadvertent impacts will likely occur where increases in access will bring vandals to the sites. These impacts are not expected to be high for the acreages proposed because they lie in low site density areas.

A high probability of permanent damage to approximately 2,700 sites due to noncommercial sales estimated at 1,000 cords per year will occur. Damage to cultural values from unsupervised on-demand woodcutting is not known due to a lack of inventory data. Significant impacts are likely occurring due to the concentration of the noncommercial activities in high site density areas west of Cortez and the Disappointment Valley. Many of the areas are not inventoried due to low personnel levels and stipulations which are not monitored for compliance. Current sand and gravel operations may have permanent impacts to approximately 20 archaeologic and historic sites, which may be inadvertently damaged due to gravel operations increasing their visibility. Vandalism may occur in high site density areas. Impacts will be lessened by increased supervision and monitoring all operations. Impacts from DOE lease traces and hard rock mining would be similar to those listed under the Resource Conservation Alternative.

Summary

The Current Management Alternative will have adverse impacts to cultural sites due to the lack of sufficient positive action to discourage vandalism and site erosion. Increases in access will accelerate these impacts, especially in areas which were protected by limited access and rough terrain. A generally low level of monitoring, planning, and cultural inventory will also have negative impacts to cultural values. The Anasazi Heritage Center, the Special Recreation Area Management Plan in the Silverton

area, and visitor management on the Dolores River will have a net benefit to culture sites in promoting public support and channeling visitor impacts to sites. Project developments for livestock grazing, wildlife, and forestry will have impacts to sites which will vary according to involved areas. Levels of monitoring will be inversely related to levels of impacts.

Visual Resources

Previous land use plans did not consider management direction for visual resources. Some impacts could occur; however, each project is currently reviewed to consider impacts to visual resources and mitigation as needed; therefore, significant impacts are forecast.

Wilderness

The continued and increased use of motorized vehicles could create damage to natural values and losses of wilderness values.

Forest products would be allowed to be gathered in all WSAs except in the Weber and Menefee mountain WSAs according to current planning direction. Continued cutting would have both short- and possibly long-term impacts to the natural landscape and would result in losses of wilderness values.

The development of minerals (both locatable and leasable) could possibly affect natural landscapes, resulting in losses of wilderness values. If this happened, the natural landscape would be changed, causing long-term impacts which could be considered irreversible and irretrievable losses of the wilderness resource. This impact would be most significant in Cross, Cahone, and Squaw/Papoose canyons, and to a lesser extent, in the Weber and Menefee mountain WSAs due to their moderate to high potential for mineral development.

Issuing ROWs for powerlines, roads, etc. could exclude areas from being considered for wilderness status at a later date, which also would be long-term commitments of resources that could be irreversible and irretrievable impacts to wilderness resources.

Summary

The Current Management Alternative of the eight WSAs has a moderate to high potential to degrade wilderness values, since future wilderness would not be designated. The largest potential degradation for this impact to occur exists in the minerals program. Oil and gas, CO_2, coal, and uranium are potentially found in many of the WSAs. Developing these minerals would destroy wilderness values, which would be irreversible and irretrievable losses of the wilderness resources. Under this alternative, there would be no significant impacts to lands and fire.

Economics

BLM investments of $400,000 over a ten-year period with continued management emphasis on tourism and oil and gas exploration and production would occur under this alternative. These levels of investments and management emphasis would result in annual gains of approximately $8 million in 1994 and $8.5 million in 2000 in increased total personal income within the planning area.

Approximately $400,000 in investments are expected to be spent on range improvements and wildlife habitat projects, resulting in moderate decreases in wildlife habitat and with resultant losses of hunting revenue in the planning area.

Cultural and recreation resources of the area would be made available for increased tourism, and mineral resources would be available for continued oil and gas exploration and development. An increase in tourist expenditures of $5 million and an increase of oil and gas production values of $3.8 million are expected annually by 1994.

Table 3-6 compares the economic effects of the Current Management Alternative to the baseline projections for 1994 and 2000 and illustrates expected changes in population, employment, per capita income, and total personal income brought about by projected hunting, grazing, fishing, tourism, and oil and gas levels. BLM management of public lands is shown in Table 3-6 to cause less than a one percent change in any economic indicator when viewing the entire planning area. No significant impacts are projected within any economic sector of the individual counties within the planning area. Social changes are expected to be inconsequential given minimal economic changes.

Summary

The Current Management Alternative projects BLM investments of $400,000 with continued management emphasis on tourism and oil and gas exploration and development. No significant impacts are projected within any economic sector of the planning area.

Table 3-6. Economic Impacts Under the Current Management Alternative.

Income sources	Population		Employment		Per capita (income 1983 dollars)		Total personal Income - (thousands of 1983 dollars)	
Year	1994	2000	1994	2000	1994	2000	1994	2000
Hunting	-20	-25	-10	-10	0	0	-176	-202
Grazing	4	4	1	1	0	0	9	10
Fishing	0	0	0	0	0	0	0	0
Tourism	572	637	263	271	-7	-8	5,115	5,545
Oil & Gas	249	253	111	112	5	5	3,162	3,248
Subtotal	805	869	365	374	-2	-3	8,110	8,601
Baseline	107,913	121,768	53,178	59,657	10,339	10,245	1,115,744	1,247,538
Total	108,718	122,637	53,543	60,031	10,337	10,242	1,123,854	1,256,139
Percent Change	0.8	0.7	0.7	0.6	0	0	0.7	0.7

Note: See Appendix 8 for methodology.
Source: BLM Data 1984.

Preferred Alternative

Introduction

This alternative protects important and sensitive environmental values while balancing competing demands by providing needed goods and services.

Energy and Minerals

The wildlife and cultural resource impacts pertaining to oil and gas leasing and to cultural withdrawals in this alternative are the same as those listed under the Resource Conservation Alternative.

No leasing for oil and gas imposed on Menefee and Weber mountain WSAs for management as semiprimitive recreation areas would result in a loss of 9,840 acres that could be occupied for oil and gas exploration, development, and production, representing less than one percent of the planning area. This would result in a potential loss of approximately 4.42 million barrels of oil and 1.31 million cubic feet of gas resources. Directional drilling methods would not be successful in exploring and producing these resources due to the limitation on depth of the producing zones (1,330 ft to 1,380 ft). Impacts would be for the long term.

No leasing in the Dolores River Canyon WSA (designated wilderness) would result in a decrease of 28,630 acres (approx. 2% of the planning area) available for oil and gas leasing, exploration, development, and production. This would result in a potential loss of approximately 4,216 million cubic feet of gas reserves. Impacts would be for the long term. Withdrawal would also affect locatable minerals as described under the Resource Conservation Alternative.

No leasing for oil and gas imposed on the Cross, Cahone, and Squaw/Papoose canyons for management of cultural resources would result in a decrease of 16,981 acres available for oil and gas exploration, development, and production. These areas are indicated as having high favorability for oil and gas resources (see Table 3-7 for estimated reserves).

Table 3-7.
Estimated Oil & Gas & CO_2 Reserves for Cultural Emphasis Areas.

Cultural emphasis areas	Oil (barrels)	Gas (mcf)
Cahone Canyon*	368,940	737,880
Cross Canyon	415,360	837,720
Squaw/Papoose Canyon	495,440	990,880

Source: BLM Data 1984.
Note: Colorado and Utah included. Estimates are 11% (wildcat ratio) of the reserves calculated from data from nearby producing fields as decribed under the Resource Conservation Alternative.
* Cahone Canyon also contains 46,118 mmcf of CO_2.

It was proposed that no-surface occupancy stipulations for oil and gas leasing for these areas were suitable because directional drilling methods would allow exploration and subsequent production without destroying the integrity of the canyons. Consultation indicates that a 0.25-mile horizontal offset would be the usual for a 12,000-foot to 14,000-foot well. However, Forest Oil Company drilled a directional well near the Squaw/Papoose Canyon WSA of 6,293 feet (true depth) at an average deviation angle of 17°. Horizontal offset was approximately 0.25 mile, accomplished with the drill rig set up on the canyon rim with 500 feet of surface casing. Setting back from the rim and(or) needing more surface casing would have increased the deviation angle and(or) would have caused it to be short of the target. Drilling near canyon rims runs the risk of losing mud circulation in the hole before reaching the depth of the canyon bottom. Directionally drilled holes are also unstable and could easily collapse before drilling is completed. Directional drilling does not appear to be a complete solution to the problem; in addition, production becomes a problem--equipment suffers excessive wear and thus increases maintenance costs. Also, because of these increased costs, life of the wells would be reduced and would not accomplish maximum recovery of the resource.

Assuming a large number of directionally drilled production wells around the WSA boundaries, these wells would never be able to drain the reservoirs that may exist in the WSAs. Maximum drainage distance for an oil well is 0.25-mile radius from the well; for a gas well, a 3,732-foot radius. All three canyons are within or adjacent to the Sand Canyon KGS and the McElmo and Cow Canyon unitized areas. Communitized areas exist between Squaw/Papoose and Cahone canyons and are approximately two miles north of the northern boundary of the Cross Canyon area (B. Kershaw, personal commun., 1984). The opinions arrived at from consultations are that the three canyons could not be fully explored or produced strictly by directional drilling methods, which could possibly result in losses of a potential of 1.3 million barrels of oil, 2.6 million cubic feet of gas and 46.0 billion cubic feet of CO_2.

In addition to the 880 acres of current sand and gravel permits, 400 acres would be available on Ewing Mesa to provide for future demand of these resources. Although this is an 800-acre reduction from the Resource Utilization Alternative, this acreage should be adequate for future demand in the Durango area.

Disposing of public lands (while reserving the minerals to the Federal government) will result in 21,800 additional acres of split estate management, which will add approximately 7.3 percent more split estate lands.

ORV closures associated with the cultural resources, recreation, and wildlife programs will require mining claimants to file a Plan of Operations under 43 CFR 3809 instead of a Notice of Intent.

This alternative would have approximately 34,000 acres (3%) of minerals withdrawn. It would propose to remove the mineral withdrawal on the McElmo Research Natural Area (480 acres), which should be a positive impact to the minerals program as this area was nominated as an ACMP (see Glossary).

Approximately 560 acres in the Tabeguache Creek area would be proposed for mineral withdrawal in association with a proposed Outstanding Natural Area designation. Impacts would be less acreage available for possible mineral development.

Federal coal for exploration and development would be available on 1,480 acres in the Nucla KRCRA (26.6 million tons) and 46,000 acres (1.5 billion tons) in the Durango KRCRA. The East Cortez KRCRA would not be available for possible future coal leasing (a loss of approx. 30 million tons).

No significant impacts from the ACEC designation are expected to the minerals program.

Summary

The greatest impacts to minerals under the Preferred Alternative are the no leasing restrictions in the Cross, Cahone, and Squaw/Papoose canyons and Menefee and Weber Mountain areas. All information indicates a high potential for oil and gas reserves in these areas with little or no possibility of fully exploring or producing those reserves with imposed no-surface occupancy restrictions. Directional drilling does not appear to be the solution in the Cross, Cahone, and Squaw/Papoose canyons and is not a viable alternative for Menefee and Weber mountains. This could result in losses of approximately 5.7 million barrels of oil, 3.9 million cubic feet of gas, and 46 billion cubic feet of CO_2.

The production and use of coal, oil and gas, and other minerals are irreversible commitments of natural resources. To the extent they are developed in this alternative, there will be irreversible and irretrievable commitments of resources.

Vegetation

Impacts to vegetation would be similar to those listed under the Resource Conservation Alternative, except that more sites would be converted from poor to fair condition and from fair to good condition. Figure 3-4 projects the expected changes in vegetation condition in the long term (unclassified vegetation conditions are presently unknown, but changes will probably occur over the term of the plan).

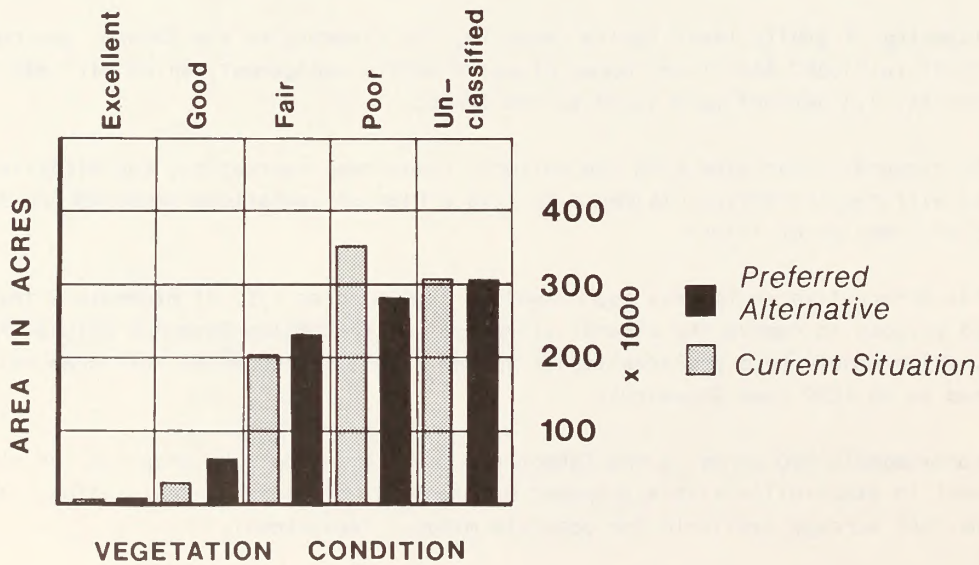


Figure 3-4. Long-term changes in vegetation condition under the Preferred Alternative.

Range improvements and treatments proposed would be needed to implement management actions and would have positive impacts to vegetation. Many of the projected improvements would lead to improved livestock distribution and the production of better quality and quantity of livestock forage and would have beneficial effects on livestock production. Additional forage may be produced as a result of timber and woodland harvesting.

Vegetation, especially any T&E species, would be protected by designating the Dolores River Canyon WSA as wilderness.

Summary

In the long term, the overall types and productivity of forage species produced on public lands would improve under this alternative.

Properly placing and designing improvement projects could lessen some of the possibly adverse impacts to vegetation.

Soils and Water

Impacts would be similar to those listed under the Resource Conservation Alternative, except that only the Dolores River Canyon WSA would be recommended for wilderness.

Summary

Implementing the Preferred Alternative would result in significant decreases in erosion, sediment, and salinity yields and would provide protection to domestic and municipal water sources.

Terrestrial Wildlife

Impacts due to livestock grazing and oil and gas leasing are similar to those described under the Resource Conservation Alternative.

Range and habitat condition could be expected to improve on 810,000 acres. As many as 9,040 acres would be treated under wildlife program funding. Approximately 12.4 miles of riparian habitat would be improved with instream structures and fencing. Water development would improve 11,200 acres of habitat.

Lands disposal would eliminate 2.1 percent of existing wildlife habitat and 8 miles of riparian habitat. Crucial big game winter range losses (600 ac) may be locally significant due to cumulative impacts primarily caused by private land development. Long-term impacts to big game migration routes between Durango and Bayfield are also due primarily to private land development. Disposing of 560 acres in those areas will accentuate the problem.

Coal leasing would not significantly affect wildlife populations. Sand and gravel mining could have locally significant cumulative impacts on deer and elk herds east of Durango in conjunction with private land development and private coal.

Designating the Dolores River Canyon WSA as wilderness would protect undeveloped wildlife habitat and would not significantly affect implementing the wildlife program. Nondesignation for the other WSAs could result in road development and habitat loss associated with locatable mining activities.

Wildlife habitat should benefit from the designation of the ACEC due to more intensive management.

Summary

Terrestrial wildlife habitat conditions should improve over the majority of the planning area due to more intensive management of wildlife habitat, livestock grazing, soils and water, and vegetation. River otters, bighorn sheep, bald eagles and peregrine falcons should benefit from management protection. Land disposal could cause losses of riparian values and winter ranges.

Aquatic and Riparian Wildlife

As previously noted in the Resource Conservation Alternative, the development of AMPs will greatly benefit the aquatic and riparian habitat resource. However, present downward trends are expected to significantly affect approximately 94 miles of aquatic habitat and will have unquantifiable impacts to an additional 306 miles of stream habitat. When AMPs are implemented, habitat conditions are expected to improve for reasons similar to those given under the Resource Conservation Alternative.

It is anticipated that wildlife management activities will have significant, positive impacts to 94 miles of aquatic and riparian habitat. However, without further monitoring of the remaining 306 miles of stream habitat, impacts cannot be quantified. Unless activity plans and specific habitat improvements are developed and implemented, the trend toward deterioration will probably continue, especially on those stream miles where habitat quality is not of a high enough priority to warrant improvement practices. Baseline data collection is critical to incorporate aquatic and riparian objectives into activity plans. These impacts are expected to be both significant and adverse, unless these baseline studies are conducted.

Short-term, localized impacts are expected to be significant from constructing recreation facilities. In addition, some long-term impacts to aquatic and riparian habitat from increased fisherman and visitor use will occur but are presently unquantifiable. Long-term, beneficial impacts are anticipated on those fisheries associated with portions of the San Miguel and Dolores rivers due to expected increases in public and interagency support for habitat improvement and HMP implementation.

Soils and water management activities will result in long-term improvements to the aquatic and riparian habitat by decreasing sediment, salinity, and pollution caused by heavy metals.

Summary

It is anticipated that livestock grazing activities will have some adverse impacts in the short term until AMPs have been implemented. As activity plans are completed, there should be long-term, beneficial impacts to at least 94 stream miles. Also, trends on the remaining approximately 306 miles of stream habitat should improve following baseline data collection and incorporating aquatic and riparian objectives into the AMPs. There will be significant beneficial impacts due to wildlife management activities on approximately 94 miles of stream habitat. However, the remaining 306 miles of stream habitat may have significant adverse impacts until inventories and(or) monitoring are completed where areas which need improvement are identified and implemented. Recreation should have beneficial impacts as should soils and water activities; no significant impacts are expected from other activities, except mineral development, where impact assessments will be considered on case-by-case bases.

Livestock Grazing

Under this alternative, an initial reduction of 22,461 AUMs is proposed on all allotments, which would result in a decrease of 33 percent of the current active preference. These initial adjustments are needed to help achieve the management actions developed for each allotment in the "I" Category (see Appendix 9-A). Appendix 9-H displays the recommended changes in AUMs for all allotments.

The short-term impacts to livestock grazing are partially mitigated because during the 1980 through 1982 grazing seasons, non-use amounted to 13,881 AUMs. This non-use would be a portion of the initial downward adjustment proposed in this alternative. The impacts would therefore be somewhat mitigated since the net reduction from recent actual use would be approximately 7,580 AUMs. In the long term, 73,601 AUMs would be available for livestock use or an increase of 13 percent of the current active preference. This projected increase of livestock forage is dependent on implementing grazing systems, installing range improvements, and establishing land treatments to increase forage productivity, improve distribution patterns, and convert potentially suitable sites to suitable sites. Table 3-8 summarizes the initial and long-term changes proposed in current active preference.

The impacts to each livestock operator would vary according to how grazing use in the allotment fits into the yearlong ranch operation. Increases or decreases of more than 15 percent of current authorized use would normally be phased in for a five-year period, thus allowing the operator to secure alternative pasture or forage and(or) to reduce herd size. Adverse impacts are projected on meeting AMP objectives on the Dry Creek Basin and Disappointment Valley AMPs due to managing horses in the Spring Creek Basin area to keep their wild and free roaming status.

Wilderness designation of the Dolores River Canyon WSA would have no significant short- or long-term impacts to livestock grazing management.

Designation of the Anasazi Cultural Multiple Use Area as an ACEC would benefit livestock management through more intensive management.

Table 3-8.
Changes in Grazing Use Under the Preferred Alternative.

Grazing use	Total AUMs	Net change in AUMs	
		AUMs	Percent
Current active preference	64,232	--	--
Initial adjustment	42,771	-22,461	-33
Long-term adjustment	73,601	+9,369	+13

Source: BLM Data 1984.

Summary

Short-term impacts to livestock grazing are partly mitigated by the non-use that has typically occurred; however, there would be losses to livestock operators due to lowered livestock production. In the long term, livestock operators should realize significant increases in livestock production.

Through proper mitigation, most adverse impacts due to reductions to livestock grazing management could be avoided. Wild horse management could have long-term adverse effects on livestock grazing management.

Wild Horses

Under this alternative, a healthy, viable population of 50 wild horses would be maintained in the Spring Creek herd area and all horses would be removed from the Naturita Ridge herd area.

The short- and long-term impacts to the Spring Creek herd are similar to those discussed previously under the Resource Conservation Alternative. Projected impacts to the Naturita Ridge herd are similar to those discussed under the Resource Utilization Alternative.

Forestry

Range maintenance of existing chainings reduces the potential woodland production by eradicating young pinyon-juniper stands. Since this acreage is not part of the woodland base, these actions would have no impacts to the sustained yield harvest level. Chaining mature pinyon-juniper will reduce the sustained yield base. Livestock grazing management will chain 3,050 acres of pinyon-juniper in the next 10 years, which will reduce the woodland base by 7 percent and result in a production loss of 92 cords per year over the long term. Assuming that chaining continues, the woodland base could be reduced over the long term.

Roller chopping of existing chaining for wildlife habitat improvement reduces the potential woodland production. Since this acreage is not part of the woodland base, these actions would have no impacts to the sustained yield harvest level. Burning and crushing stagnated oak stands can eventually result in species and growth more favorable to forestry. The impacts could not be considered significant.

Withdrawals from timber and woodland production include the areas of Silverton, the Dolores River, Lemon Dam and Vallecito Lake, and Menefee and Weber mountain areas. Wood fiber production losses as a result of these withdrawals are approximately 126 MBF each year. When looking at the total timber and woodland production for the region, the yearly losses of 126 MBF are insignificant.

Although no timber harvesting is allowed in the WSAs, the available forest land will remain in the sustained yield base until the area has been designated as wilderness. No available forest land was identified in the Dolores River Canyon WSA; thus, there would be no impacts to forestry.

Road and pad construction as a result of mineral activities can have both beneficial and adverse impacts. The losses of production and improved access are so minimal that the impacts are not significant.

Land disposal actions could reduce the commercial timber base by 23 percent and result in production losses of 148 MBF per year. The woodland base could be reduced by 11 percent with a production loss of 140 cords per year, not significant impacts.

Placing commercial forest under intensive management should result in future yields that double the existing unmanaged stand yields. Timber yield increases associated with the small BLM timber base are insignificant when compared with total timber production for this region. Placing the woodland species under management is significant because, for the first time, the woodland base is recognized as a legitimate resource and will be managed for a sustained yield of wood fiber.

Summary

Total forest production loss associated with existing and proposed management action could be 390 MBF per year (780 cords/yr). When compared with the expected yearly demand of 35 MMBF and anticipated timber production by private, State and other Federal agencies, this loss is insignificant. Vegetation treatments by range and land disposal actions could reduce the woodland sustained yield base by 18 percent in the next 10 years. Continuing these actions would have substantial impacts over the long term.

Recreation

Livestock grazing, mineral resources, public land disposal, wildlife management and forestry impacts would be the same as those listed under the Resource Conservation Alternative.

Historic motorized use in the Dolores River Canyon WSA could not continue because it would be closed to ORVs. In the long term, opportunities for wilderness recreation, controlled through intensive management, are no longer available in existing settings except in the Dolores River Canyon WSA.

Wilderness designation of the Dolores River Canyon WSA as wilderness would have long-term, positive impacts to recreation by continuing to provide primitive recreation experiences in an ecotype not well represented in the NWPS. Nonwilderness designation of the other seven WSAs could adversely affect the primitive recreation experience since mineral development would occur and associated roads and facilities could be constructed.

Impacts to cultural resources would be similar to those listed under the Resource Utilization Alternative. Impacts to wild horses would be similar to those listed under the Resource Conservation Alternative for the Spring Creek herd and the same as the impacts listed under the Resource Utilization Alternative for the Naturita Ridge herd.

Impacts to soils and water would be similar to those listed under the Resource Conservation Alternative, but with less positive influence on public experiences.

The continued designation of the McElmo Rare Snake and Lizard RNA would have positive impacts to research occurring in the area. Continuing the present no-surface occupancy stipulations for oil and gas leasing would also have positive impacts.

ACEC designation of the Anasazi Cultural Multiple Use Area would have long-term impacts through increased visitor use and resource protection. Designation would provide increased opportunities for public recreation experiences and cultural resources interpretation and research.

Summary

Protecting and enhancing recreation resources by management and development restrictions would have long-term positive impacts to recreation. Wilderness designation of the Dolores River Canyon WSA and ACEC designation would have positive, long-term impacts to recreation opportunities and settings.

Cultural Resources

Managing portions of the Dolores River Canyon WSA as wilderness will have long-term, positive benefits for approximately 40 archaeologic and historic sites. Positive impacts due to access control and vandalism reduction will occur. Some sites will be removed from research but not from interpretation due to the seasonal recreation boating use. Impacts will be beneficial and could be significant. Additional inventory for protection and stabilization could be delayed. Some increases in visitation can be expected, but a management plan will avoid impacts via visitor channeling and interpretation.

Restrictive ORV use and no-surface occupancy stipulations for oil and gas leases or no leasing on Cross, Cahone and Squaw/Papoose canyons and the Tabeguache Creek area will have a significant beneficial effect on approximately 2,400 archaeologic and historic sites. Nondesignation of these four WSAs could allow increased development activities. The resultant development could heavily affect many sites due to increased vandalism. No significant impacts will result if patrol levels are adequate. There will be no significant impacts to cultural resources due to nondesignation of Weber and Menefee mountains and McKenna Peak WSAs.

AMPs will have beneficial impacts to an unknown number of archaeologic and historic sites. Increases in allotment planning via projects, fences, and livestock distribution will reduce impacts to sites from trampling, the primary impact of livestock grazing.

Increases in numbers of livestock will likely have long-term significant effects on an unknown number of archaeologic and historic sites via trampling, especially in the Sacred Mountain area and near water resources. Intensive inventories near water sources and a strong data base in site areas will lessen impacts through avoidance; if these measures are undertaken, no significant impacts should occur.

Maintaining 18,000 acres of vegetation treatment may have permanent negative effects on approximately 1,100 archaeologic and historic sites. Avoidance measures are assumed; however, inadvertent damage may occur in the Sacred Mountain area where site densities are especially high. A strong inventory base and close monitoring should avoid most of these impacts.

New vegetation treatments to 22,000 acres may permanently affect approximately 1,400 archaeologic and historic sites. Inadvertent damage to sites in high density areas, especially the Sacred Mountain area, may occur. Adequate inventories in these areas and intensively monitoring all projects will reduce these impacts so they are not significant.

Maintaining and installing range improvement projects may have some impacts to an unknown number of archaeologic and historic sites. Any damage would be low and inadvertent. All projects will use avoidance via stipulations. Inadvertent damage will be much less if more supervision and monitoring are done.

Managing Weber and Menefee mountain WSAs for recreation values and ORV closure will have long-term, beneficial impacts to approximately 10 archaeologic and historic sites. Some protection to these sites will be afforded via monitoring and management restrictions; thus, no significant impacts will occur.

Managing the Silverton SRMA would be similar to those impacts listed under the Resource Conservation Alternative.

Disposing of 21,800 acres of public lands will have no significant impacts to archaeologic, sacred, or historic sites. All impacts will be avoided or mitigated with Class III inventories and data recovery if needed.

Managing public land for erosion and sediment control may have positive impacts to approximately 25 archaeologic and historic sites for the long term. Erosion control measures may prevent losses of all or portions of these sites, which could be significant if control measures are targeted to cultural resources protection. Additional inventory will be needed to identify locations and needs. There is a low likelihood that inadvertent damage to approximately 200 archaeologic and historic sites may occur if adequate inventories are not completed and monitoring levels are low.

Developing watershed management plans will likely have long-term, positive impacts to an unknown number of archaeologic and historic sites. Through management plans, effects on some sites from erosion can be avoided or mitigated before information losses occur. These impacts are probably not significant for the short term but could be for the long term.

Managing 46,000 acres for salinity control may have permanent impacts to approximately 180 archaeologic and historic sites. These would result from inadvertent activity related to project installation and will be greatly reduced with adequate inventories and close supervision in sensitive areas, all of which are in low site density areas.

Inventory and mitigation of point sources of acid mine drainage in the Silverton area may have negative impacts to an unknown number of historic sites. Since most of these acid sources are mine portals, care will need to be taken to avoid and mitigate impacts to any significant historic sites. If this and construction monitoring are done, no significant impacts will occur.

With 4,710 acres per decade of commercial and noncommercial forest sales, there is a moderate likelihood that approximately 100 archaeologic and historic sites will suffer some form of permanent damage. This will not be significant if adequate inventory data are accumulated to provide for their avoidance (and possibly mitigation) and if close supervision of the timber sales is undertaken. Inadvertent impacts will likely occur in some cases where increases in access will bring vandals to the sites. These impacts are not expected to be high for the acreages proposed as they lie in low site density areas.

Impacts due to wildlife management activities will be the same as those listed under the Current Management Alternative, except that habitat improvement projects may have permanent effects on 155 archaeologic and historic sites if inventory levels are low and monitoring personnel are unavailable.

Impacts from oil and gas and CO_2 operations, DOE lease tracts, and hard rock mining are similar to those discussed in the Resource Conservation Alternative.

The increasing levels of sand and gravel operations on Ewing Mesa will likely have permanent effects on approximately 25 archaeologic and historic sites. Sites directly affected by gravel operations will be mitigated if not assessed as valuable in place. No significant impacts will occur here. However, inadvertent damage may occur to a few sites because of visibility and increases in accessibility to the public land on the mesa top.

Coal leasing of 1,480 acres near Nucla will affect approximately 60 sites. Since this would be a strip mining operation, data recovery on all sites may be needed. No significant impacts would occur, but data recovery would be costly.

Coal leasing on 46,000 acres in the Durango KRCRA may have permanent negative effects on approximately 280 archaeologic and historic sites. Since most mining here will be underground, impacts will be primarily from increased access to mining activity, bringing increases in visitation and vandalism. Inadvertent losses should be minimal. More attention to avoidance and data recovery should be given to areas with high potential for subsidence and sites near access roads and mine portals. Site-specific inventories will be necessary. Most of this land is private surface and will require coordination with landowners for access to do cultural resources work.

The designation of the Anasazi Cultural Multiple Use Area as an ACEC will have a positive impact to cultural resources through more intensive monitoring and supervision of the cultural resources.

Summary

The Preferred Alternative will have net beneficial impacts to cultural resources through developing CRMPs and reductions in access. Livestock grazing plans and recreation management will also have overall benefits to cultural resources. Some remote areas will be opened, if only briefly, for mineral entry access, and damages from vandals will be minimal as a result. Increases in patrol and monitoring mineral actions will benefit cultural resources in reducing vandalism. The Anasazi Heritage Center will improve cultural resources management, while also providing a focus for cultural resources education.

The designation of the Anasazi Cultural Multiple Use Area as an ACEC will have a positive impact to cultural resources through more intensive monitoring and supervision.

Visual Resources

Approximately 30 percent of the important landscape areas within the planning area are not identified for special visual management. Impacts to scenic values could occur from multiple resource development projects that would be allowed with moderate to high visual contrast.

Summary

Other important landscape areas would receive VRM Class I or II management, which would tend to maintain visual resources on 70 percent of the important landscape areas within the planning area.

Wilderness

Wilderness designation for the Dolores River Canyon WSA would have long-term, positive impacts to the wilderness resource, including enhancing natural values and adding to outstanding opportunities for solitude and primitive recreation.

Nonwilderness status for the other seven WSAs would have long-term, adverse impacts to the wilderness resource. Future mineral development and associated roads and facilities could significantly alter the natural landscape and opportunities in the region for solitude and primitive recreation. Nondesignation of the seven WSAs would be a national long-term loss of ecological systems and landforms that are not currently part of or may never be included in the NWPS.

Wildlife viewing opportunities would be enhanced in the Dolores River Canyon WSA by the reintroduction of bighorn sheep and river otters.

A herd of 50 wild horses (the Spring Creek Basin herd) is to be maintained in the McKenna Peak area. No significant losses of supplemental values would occur.

Implementing intensive grazing management in Cross Canyon and portions of the McKenna Peak WSAs could be long-term, irreversible and irretrievable losses of the wilderness resource.

Harvesting wood products would not be encouraged in the nonsuitable WSAs; however, limited impacts to wilderness values could occur due to removing wood products.

Withdrawing all forms of mineral entry on the Dolores River Canyon WSA will preserve and protect the natural landscapes. However, some pre-FLPMA mining claims or mineral leases could adversely affect the wilderness values in the Dolores River Canyon WSA should it be developed.

The WSAs indicated as nonsuitable (Cross, Cahone, and Squaw/Papoose canyons, Weber and Menefee mountains, McKenna Peak, and Tabeguache Creek WSAs) could all have mineral development that would adversely affect wilderness values. Coal and oil and gas potentially are found in association with the Weber and Menefee mountain WSAs. No coal development will be allowed on the Weber and Menefee mountain WSAs, but pre-FLPMA oil and gas leases exist in both areas. The Cross, Cahone, and Squaw/Papoose canyon WSAs would be protected in the future from new oil and gas development; however, pre-FLPMA leases exist which, if developed, would significantly affect wilderness values. The potential is much less significant for the McKenna Peak and Tabeguache Creek WSAs to be developed for their mineral potential.

Locatable minerals could also have significant impacts to wilderness values. Pre-FLPMA mining claims exist in significant quantities in Tabeguache Creek, McKenna Peak, and Squaw/Papoose, Dolores River and Cahone canyon WSAs. The potential impacts from developing minerals could have significant, long-term irreversible, irretrievable impacts to the wilderness resource. No validity determinations have been performed on any of these mining claims.

Six of the WSAs recommended unsuitable (except McKenna Peak) would receive Class II visual protection concerning construction of ROWs, which does not preclude development but provides high visual protection. Developing the ROWs could still possibly adversely affect wilderness values.

Wilderness values could be degraded if significant projects are undertaken in the McKenna Peak WSA to correct erosion and salinity problems.

Summary

The seven WSAs not recommended suitable for wilderness designation have a moderate to high potential for degradation of natural values if not designated wilderness, primarily as a result of mineral development. The potential is high for this impact to occur in Cross, Cahone, and Squaw/Papoose canyons, Weber and Menefee mountains, and portions of the McKenna Peak WSAs. The impacts would be losses of solitude, primitive recreation, and diversity in the NWPS.

Wilderness values would be enhanced by the wilderness designation of the Dolores River Canyon WSA as wilderness opportunities for solitude, primitive recreation, and diversity in the NWPS will be enhanced.

Wilderness opportunities and values have a high probability of being lost in the other WSAs due to mineral, range, and salinity management and could be considered permanent losses of wilderness resources.

Lands

Impacts would be similar to those described under the Resource Conservation Alternative for land disposal, except approximately 2 percent of the public land would be disposed of and(or) consolidated.

Fire

Impacts would be similar to those listed under the Resource Conservation Alternative.

Economics

The Preferred Alternative projects BLM investments of $2.3 million over a ten-year period with a moderate degree of management emphasis on all resources. This level of investment and management emphasis would result in annual gains of approximately $13 million in 1994 and $14 million in 2000 in increased total personal income within the planning area.

Improvements in vegetation condition and wildlife habitat would take place with only small increases in wildlife and livestock numbers for either the short or long term. Consequently, no substantial changes in hunting or grazing revenues are projected despite expenditures of $1 million to livestock grazing, $530,000 to wildlife and $450,000 to soils and water projects. Improvements in vegetation condition and wildlife habitat could bring substantial returns.

Revenues from fishing are expected to increase moderately given aquatic and riparian habitat improvements and expenditures of $358,000. Management focus on recreation, tourism, and cultural resources reach their high with additional annual tourist expenditures increasing by $10 million. Oil and gas production may be expected to increase moderately by an annual value of $1.5 million in 1994.

Table 3-9 compares the economic effects of the Preferred Alternative to baseline projections for 1994 and 2000 and illustrates expected changes in population, employment, per capita income, and total personal income brought about by projected hunting, grazing, fishing, tourism, and oil and gas levels.

BLM management of public land is shown in Table 3-9 to cause no greater than a 1.2 percent change in any economic indicator when viewing the entire planning area. No significant impacts are projected within any economic sector of the individual counties within the planning area. However, a population increase of more than 500 persons is projected to occur in Montezuma and La Plata counties by 1994 due to increased levels of tourism. Social changes are expected to be inconsequential given minimal economic changes.

Table 3-9. Economic Impacts Under the Preferred Alternative.

Income sources	Population		Employment		Per capita Income (1983 dollars)		Total personal Income - (thousands of 1983 dollars)	
Year	1994	2000	1994	2000	1994	2000	1994	2000
Hunting	0	0	0	0	0	0	0	0
Grazing	14	15	4	4	-1	-1	34	40
Fishing	3	2	77	79	-4	-4	1,268	1,391
Tourism	1,143	1,274	525	542	-14	-16	10,229	11,089
Oil & Gas	100	102	45	45	2	2	1,276	1,311
Subtotal	1,260	1,393	651	670	-17	-19	12,807	13,831
Baseline	107,913	121,768	53,178	59,657	10,339	10,245	1,115,744	1,247,538
Total	109,173	123,161	53,829	60,327	10,322	10,226	1,128,551	1,261,369
Percent change	1.2	1.1	1.2	1.1	0	0	1.1	1.1

Note: See Appendix 8 for methodology.
Source: BLM Data 1984.

SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

This section identifies the trade-offs between short-term use and long-term productivity of the resources involved in the alternatives. For this analysis, short term refers to the period involved for implementing the plan (within approx. 10 years) and long term refers to a 20-year period (unless otherwise noted under a specific resource).

Energy and Minerals

No leasing or withdrawal from mineral entry restrictions proposed by various resources would create long-term, adverse effects on mineral development, which would vary by alternative from 1% to 15% of the planning area.

Vegetation

For all alternatives in the short term, vegetation would be disturbed on vegetation manipulation areas, timber harvest sites, and mineral development locations. Vegetation disturbance could occur on more acreage under the Resource Utilization Alternative. A significant, long-term increase in vegetation production could occur for the Resource Utilization and the Preferred alternatives. Vegetation cover would reestablish on disturbed areas, and there would be an increase in plant vigor, forest growth and reproductions, seedling establishment, litter accumulation, and overall vegetation improvement.

Soils and Water

In the short term, soil losses would increase slightly from vegetation manipulation, timber harvesting, and mineral development under all the alternatives. The most crucial short-term soil losses would occur under the Resource Utilization Alternative. The least amounts of loss would result under the Current Management Alternative. In the long term (under all alternatives, except for the Current Management Alternative), increased vegetation production and ground cover would significantly reduce soil losses, thus providing long-term net improvements to the soil resources.

In the short term, water quality conditions would decline under all alternatives because of vegetation manipulations and other soil-disturbing activities. The Resource Utilization Alternative proposes the most manipulation projects. In the long term (for all alternatives, except for the Current Management Alternative), water quality improvements would be expected because of water treatment projects and vegetation reestablishment. The Resource Conservation Alternative identifies the most projects that would increase water quality.

Wildlife

Terrestrial. In the short term, big game forage and habitat would decrease because of vegetation manipulation projects. The Resource Utilization Alternative proposes the most acres for manipulation. In the long term, as vegetation for forage and habitat reestablishes, only the Resource Utilization Alternative proposes a significant increase in big game populations.

Aquatic. In the short term, aquatic and riparian habitat could decline in quality, pending improved management actions, would be most noticeable in the Resource Utilization Alternative. All alternatives, except the Current Management Alternative, should improve aquatic and riparian conditions over the long term.

Livestock Grazing

In the short term, initial stocking rates of AUMs would be decreased because of vegetation manipulation projects, most evident in the Resource Conservation Alternative and least evident in the Current Management Alternative. In the long term, as vegetation cover is reestablished, forage productivity would increase, allowing increases in available forage. These increases would not occur in the Current Management Alternative but would occur in the other alternatives, with the greatest increases occurring in the Resource Utilization Alternative.

Wild Horses

Short-term impacts to wild horses would be minimal under all alternatives, except under the Resource Utilization Alternative, where the horses would be removed. Long-term impacts would be generally positive under all alternatives except under the Resource Utilization Alternative.

Forestry

No significant, short-term impacts would occur under any alternatives. The major long-term impact is increased production due to more intensive management of the forest resource, which would be most notable in the Resource Utilization and Preferred alternatives.

Recreation

In the short term, recreation activities on public land such as camping, hunting, fishing, and boating would remain constant in all the alternatives. In the long term, however, recreation opportunities could increase in all alternatives. The increases would result through more access, better developed sites, increases in water yield and quality, and better big game habitat resulting in increased game population. The Resource Utilization Alternative proposes the largest increase in visitor use.

Cultural Resources

For all alternatives in the short term, cultural resources could benefit because the increased project work would create cultural inventory needs and land clearances on lands that are affected by the projects. Increases in access brought about by the Resource Utilization Alternative and the Current Management Alternative will have significant, long-term adverse impacts due to increases in vandalism. The areas identified as emphasis areas would benefit in the short term and long term under all alternatives except under the Current Management Alternative. All other long-term effects to cultural resources would be insignificant.

Wilderness

Wilderness designation would provide for both short- and long-term protection for identified wilderness values due to restrictions on development activities. Designating WSAs as wilderness would have long-term impacts by preserving ecological systems to benefit future generations.

Nonwilderness designation of the WSAs would have both short- and long-term adverse impacts to the wilderness values by allowing mineral exploration and development and associated ROWs activities.

Economics

In the short term and long term, socioeconomic conditions in the planning area would not be significantly affected by management proposals under any of the alternatives.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

This section identifies the extent to which the alternatives would irreversibly limit potential uses of the land and resources. Irreversible and irretrievable commitments of resources occur when a wide range of future options is hindered.

Energy and Minerals

Designating existing WSAs as wilderness would result in irreversible and irretrievable losses of mineral development in those areas. The leasing and mining of coal, oil & gas, CO_2, and uranium and vanadium reserves would result in irreversible and irretrievable losses of the resources that are extracted and the resources that would remain as unrecoverable. Extents of these impacts would vary greatly depending on developing the resources.

Soils

Minor soil losses would be irretrievably committed in areas of vegetation manipulation, timber harvesting, and mineral development. However, new soils would develop naturally at slow rates.

Terrestrial and Aquatic Wildlife

Wildlife habitat lost through land proposals, energy development, urban expansion, and project implementation would be irretrievably and irreversibly lost.

Cultural Resources

Access into remote regions of the planning area, especially in the Squaw/Papoose, Cross-Cahone and the Dolores River canyons and the Tabeguache Creek areas will degrade the quality of these areas for the educational and recreation appreciation of their important cultural resources. It will also have permanent, irreversible direct impacts to a large number of sites due to vandalism.

Lands

Public land disposal would result in irreversible and irretrievable losses of administrative control and public uses for all resource values.

Wilderness

Not designating existing WSAs would result in irreversible and irretrievable losses of wilderness values in those areas of regional and national significance.

Net Energy Analysis

A specific energy analysis was not performed for this RMP/EIS because no major actions affecting specific sites are being proposed. A site-specific energy analysis will be included in the EIS or EA prepared for any major site-specific actions. A meaningful net energy analysis requires that a specific action be analyzed and some preliminary engineering data be available.

CHAPTER FOUR -

CONSULTATION AND COORDINATION

CHAPTER FOUR
CONSULTATION AND COORDINATION

This RMP was prepared by an interdisciplinary team of resource specialists from BLM's San Juan Resource Area, Montrose District and Colorado State Office. RMP writing began in February 1983, which was preceded by steps which included issue identification, resource inventories, interagency coordination, and public participation. Consultation and coordination with agencies, organizations, and individuals have occurred in a variety of ways throughout the planning process.

Consistency with Other Plans

The BLM planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans of other Federal agencies, State and local governments, and Indian tribes, so long as the guidance and resource management plans are also consistent with the purposes, policies, and programs of Federal laws and regulations applicable to public land..." Several actions have occurred to try to ensure that this consistency requirement was met. Letters requesting copies of plans or policies concerning the public land have been sent to all counties and Indian tribes that have significant involvement in the RMP. Montrose County responded with a copy of their land use plan which does not apply to this RMP area. In addition, the major counties were briefed on the resource alternatives in September 1983 to gather input concerning their desires and plans. The Colorado Department of Natural Resources was contacted and briefed on the alternatives in December 1983. The above-mentioned groups, counties, and agencies will receive copies of the draft RMP and will be asked for comments.

Hovenweep Plan

The personnel at Hovenweep National Monument are currently developing a management plan considering a variety of alternatives, due to be released for public comment in the summer of 1984. One of the alternatives being considered is to expand the monuments to include public land. The BLM is knowledgeable about this proposed alternative; we have not incorporated this action into our plan because their plan has not been subjected to public review and a final plan has not been developed. If expanding the monument becomes their proposed action, then a plan amendment would likely have to occur on this RMP to incorporate their proposal prior to any action being undertaken.

Cooperating Agency

The San Juan National Forest has requested to be a cooperating agency on the land use plan due to an exchange of land that occurred on October 31, 1983, between the Bureau of Land Management and the U.S. Forest Service. Congress authorized in Public Law 98-141 an exchange of lands located generally in the Lemon Dam and Vallecito Lake area, Silverton area, and along the Upper Dolores River (see Appendix 1). The exchange was undertaken to improve management on those public lands.

Because the exchange occurred after the San Juan National Forest Plan was finalized, the BLM land use plan is being used to analyze alternatives and provide guidance on the

lands to be managed by the Forest Service. Appendix 1 gives a detailed description of the land use planning guidance for both the tracts of land being transferred from BLM to the U.S. Forest Service and those lands being transferred from the U.S. Forest Service to BLM.

Anasazi Advisory Committee

Purpose of Committee

The Anasazi Advisory Committee was formed by U.S. Congressman Roy Kogovsek (Third District-Colorado) in late 1981. The committee was selected in response to a government proposal for legislation to create a National Conservation Area (NCA) and consists of southwestern Colorado residents representing diverse interest groups.

The proposal for creating a NCA involved 217,000 acres of public land under BLM's jurisdiction in southwestern Colorado. The proposed area contains significant numbers of archaeological sites, which are cultural remnants of Anasazi habitation that date between A.D. 500 to A.D. 1300. The NCA designation sought to protect and perpetuate a unique cultural resource while ensuring long-term use and development of such other national resource values as oil and gas, CO_2, coal, uranium, grazing, and other uses.

Congressman Kogovsek did not perceive a clear definition of the problem or the need for an NCA; therefore, he established a grassroots committee and charged them to define the causes of the problems and ways to resolve those problems.

The committee finished their tasks in October 1983 and made the following recommendations (a complete committee report is available in BLM's San Juan Resource Area Office):

1. Maintain the multiple use concept administered by BLM.

2. Protect the archaeological and cultural resources from continued erosion through limited access, stronger enforcement, limiting hunting activities and increased BLM patrol and monitoring of the area.

3. Manage all resources through a comprehensive management plan developed specifically for the Sacred Mountain Planning Unit.

4. Develop an integrated network of educational programs coordinated through the Anasazi Heritage Center.

5. Maintain and stabilize archaeological sites.

6. Develop a cooperative program with other government agencies.

7. Establish an advisory board for the Sacred Mountain Planning Unit to insure local input for all multiple use activities.

8. Request that Congressman Kogovsek and his staff monitor closely the planning and the budgeting activities of the BLM in the area.

Affected Areas

The San Juan-San Miguel RMP contains a highly diverse planning area. The following counties, states, national forests, indian tribes, national parks and monuments, and BLM resource areas are either contained in the area or are immediately adjacent.

Counties/State

Colorado

Archuleta
Dolores
La Plata
Mesa
Montezuma
Montrose
San Juan
San Miguel

New Mexico

Rio Arriba

Utah

San Juan

National Forests/State

Colorado

Gunnison
Rio Grande
San Juan
Uncompahgre

Utah

Manti-La Sal

National Parks/Monuments

Colorado

Hovenweep National Monument
Mesa Verde National Park

Indian Tribes/State

Jicarilla Apache, New Mexico
Navajo, Arizona/New Mexico/Utah
Southern Ute, Colorado
Ute Mountain Ute, Colorado/New Mexico

BLM Resource Area/State

Colorado

Alamosa
Grand Junction
Gunnison
Uncompahgre

New Mexico

Farmington
Taos

Utah

Grand
Monticello

Public Participation

A Federal Register notice was published on January 5, 1980, that announced the formal start of the planning process. A preliminary list of issues was presented to the public in a series of workshops in early 1981; these issues were then refined to nine main issues based upon public input and BLM professional opinion.

The final list of planning issues and criteria was sent to the public in the June 1983 San Juan Resource Area Bulletin. Three meetings were held in June 1983 to discuss the grazing allotment categorization process to the livestock users. A newsletter, with

approximately 800 people on the mailing list, has been sent out quarterly since the spring of 1983 to keep the public informed of planning actions. Three public workshops were held in September 1983 to discuss the planning alternatives.

Numerous other coordination meetings, telephone calls, personal contacts, etc. have occurred in developing this RMP. Records of many of these contacts are found in the San Juan Resource Area files.

Distribution

Copies of this document have been sent to the following agencies, businesses, and interested groups for their review and comments:

Federal Agencies

U.S. Department of Agriculture
- Agricultural Stabilization and Conservation Service
- Grand Mesa-Uncompahgre-Gunnison National Forest
- Manti-La Sal National Forest
- San Juan National Forest
- Soil Conservation Service

U.S. Department of Energy

U.S. Environmental Protection Agency

U.S. Department of the Interior
- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- U.S. Fish and Wildlife Service
- Mesa Verde National Park

Western Area Power Administration

Counties (Colorado unless otherwise indicated)

Archuleta
Dolores
La Plata
Mesa
Montezuma
Montrose
Rio Arriba (New Mexico)
San Juan (Colorado and Utah)
San Miguel

Universities

Chadron State College
Colorado State University
Colorado, University of
Fort Lewis College

Universities (continued)

Illinois, University of
Minnesota, University of
Northwest University-Illinois
Utah, University of
Western State College

Indian Tribes

Jicarilla Apache
Navajo Nation
Southern Ute Tribe
Ute Mountain Ute Tribe

Local Political Organizations

Local and Regional Mayors
Local and Regional Town and City Councils
Montezuma County Energy Impact Coordinator
New Mexico Game and Fish Department
State Clearinghouses (Colorado, New Mexico, and Utah)
State Governors of Colorado, New Mexico, and Utah
Representatives and Senators (local and regional)

Colorado Organizations and Agencies

Archaeological Society
Association of 4-WD Clubs
Board of Land Commissioners
Department of Agriculture
Department of Local Affairs
Department of Natural Resources
Department of State Highways
Division of Impact Assistance
Division of Wildlife
Farm Bureau
Historical Societies
Land Use Commission
Mining Association
Mountain Club
Native Plant Society
Natural Areas Program
Natural Heritage Inventory
Office of Energy Conservtion
Office of Historic Preservation
Open Space Council
River Outfitters
Water Conservation Board

Colorado Organizations and Agencies (continued)

Western Area Council of Governments
Wildlife Federation
Woolgrowers Association

Industry and Organizations

Advisory Council on Historic Preservation
American Mining Congress
American Wilderness Alliance
Amerigas
Amoco Production Company
Anaconda Copper
Anschutz Corporation
Archuleta County Cattlemen's Association
Arco Coal Company
Atlantic Richfield Company
Benham Group
Center for Wild Horse and Burro Research
Centuries Research
Champlin
Chevron Geosciences Company
Club 20
Colorado-Ute Electric Association
Complete Archaeological Services Association
Conservation Library
Consolidation Coal Company
Cotter Corporation
Crow Canyon School
Cugnini Land and Cattle Company
Delta-Montrose AVS
Division of Conservation Archaeology
Durango Helicopters/Powder Guides
Durango Regional Planning Commission
Empire Electric Association, Inc.
Energy Fuels Coal Corporation
Environmental Studies Group
Exxon Minerals Company
Farmers Mutual Telephone Company
Flatirons Surveying
Forest Oil Corporation
Friends of the Earth
Gilbert/Commonwealth Association
Glover Communications
Gold Cup Exploration, Inc.
Grace, W. R., & Co.
Grand River Institute
High Country Drifters
High Country News
Hotchkiss Woolgrowers

Impact Energy, Inc.
International Research and Evaluation
Jicarilla Archaeological Services
Kelmine Corporation
Land Protection Association, Inc.
La Plata County Cattlemen's Association
Library of Congress
Love, William B. Appraisals Inc.
Mancos Cattlemen's Association
Marathon Oil Company
MOOR Oil and Gas Corporation
Mined Land and Reclamation Division
Minerals Recovery Corporation
Mittelhauser Corporation
Mobil Producing Texas and New Mexico Inc.
Molycorp, Inc.
Mountain Bell
National Conservation Area Commission
National King Coal
National Oil Company
National Wildlife Federation
Natural Resources Defense Council
Nature Conservancy, The
Northland Research, Inc.
Northwest Pipeline Corporation
Occidental Oil Shale, Inc.
Perma Mining Corporation
Petroleum Information Corporation
Pioneer Coal Company
Public Lands Citizens' Advisory Commission
Richards & Richards
San Juan Audubon Society
San Juan Basin Research Center
Sefel Geophysics
Shell Oil Company
Shell Pipeline
Sierra Club, The
Southwest Board of Cooperative Services
Southwest Forest Industries
Standard Metals Corporation
Tera Corporation
Texas Eastern Gas Pipeline Company
Union Carbide Corporation
Union Texas Petroleum Corporation
University of Colorado Wilderness Study Group
Western Cultural Resource Management
Western Nuclear, Inc.
Wilderness Society, The
Wild Horse Organized Assistance
Wildlife Management, Inc.
Woods Canyon Archaeological Consultants
Woodward-Clyde Consultants

List of Preparers

Name	Planning responsibility	Education	Experience (years)
Scott F. Archer	Air Quality/Climate	BS, Environmental Science & Chemistry	EPA-Consultant (4 1/2 yrs); BLM-Air Quality Specialist (2 1/2 yrs)
Kristie Arrington	Cultural Resources	BA, Archaeology & Zoology, Montana State U.	BLM-SJRA Archaeologist (6 yrs); Museum of Rockies-Bozeman (1 yr); MSU field archaeologist (3 1/2 yrs)
Linda V. Branch	Writer/Editor--Coordinator	BA, Technical Journalism, Colo. State Univ.; Teaching certificate, English, Ft. Lewis College	Newspapers & nonprofit (7 yrs); BLM-Editorial assistant & writer editor (5 yrs)
Kathryn Bulinski	Lands & Realty	BS, Range & Wildland Science, Univ. of Calif. at Davis	BLM-Realty Specialist (8 yrs); BLM & USFS-Range Conservationist (1 yr); Research Assistant, UC Davis (2 yrs)
Clair Button	Wildlife	BS, Natural Resources; Univ. of Michigan	BLM-Wildlife Biologist (6 yrs)
Jeff Cameron	Fisheries Biologist	BA, Biological Science, Calif. State U. at Sacramento; Graduate School, Oregon State Univ., Fisheries/Entomology	BLM (12 yrs)
Carmen Dunn	Fire Mgmt. Officer	BS, Range	BLM (30+ yrs)
Bruce Flinn	RMP/EIS Team Leader	BS, Forest (Recreation), Colorado State Univ.	BLM (10 yrs)

List of Preparers (Continued)

Name	Planning responsibility	Education	Experience (years)
Roy Hayes	Access & Transportation		21 yrs Govt. Service; BLM (17 yrs)
Robert Kershaw	Minerals	BS, Geology	BLM-Resource Area Geologist (7 yrs)
Lori Pivonka Livingston	Recreation Technician	BS, Natural Resources & Recreation, Colorado State Univ.	USFS (1 yr)
Chip Marlow	Outdoor Recreation Planner	BS, Forest Recreation & Park Mgmt.; MS, Recreation & Park Mgmt., Southern Illinois Univ.	BLM-Recreation Planner (12 yrs)
Francisco Mendoza	Visual Resources	BS, Landscape Architecture, Univ. of Arizona	Heritage Conservation & Recreation Service (Outdoor Recreation Planner) (3 yrs); BLM-Landscape Architect (3 yrs)
Dennis Murphy	Water Resources	BS, Forest Watershed Mgmt., 1 yr. Graduate School, Utah State Univ.	BLM-Hydrologist (6 yrs)
Ray Orazem	Forestry	BS, Forest Recreation, Colo. State Univ.	BLM (14 yrs)
Barbara Ramsey	Word Processor	Business Adm., Pratt Community College	Editorial Assistant/Word Processor, Kansas State University; Federal Trade Commission, USGS, & BLM (10 yrs)

List of Preparers (Continued)

Name	Planning responsibility	Education	Experience (years)
Carlos Romaniello	Economics	MS, Agricultural Economics, U. of Arizona	U. of Arizona-Economist (2 yrs); Foreign Agricultural Service (1 1/2 yrs); BLM-Economist (2 1/2 yrs)
Doug Scott	Archaeologist	BS, Anthropology; PhD, Anthropology; U. of Colorado	BLM-Archaeologist (8 yrs)
Jon Wesley Sering	Wilderness Resource	BA, Geography, Calif. State Univ. at Long Beach; MS, Geography/Wilderness Mgmt; Univ. of Idaho	USFS-Wilderness Ranger (8 yrs); BLM-Wilderness Coordinator (7 yrs)
Ed Singleton	Natural Resource Specialist	BS, Range Management, New Mexico State Univ.; some Graduate School in Range Management	USFS (3 yrs); BLM (7 yrs)
Bob Stanger	Range	BS, Conservation, Idaho State Univ.	BLM-Range Conservation (8 yrs)
Al Tohill	Range	BA, General Biology, Hastings College	BLM-Range Conservation (8 yrs)
William Ypsilantis	Soils	BS, Forest Management, Michigan Technological Univ.; MS, Forest/Soils, Univ. of Idaho	BLM (7 yrs)

GLOSSARY

ACRE-FOOT-Quantity of water or other material required to cover 1 acre to a depth of 1 foot or a volume of 43,560 cubic feet.

ACTUAL USE-Use made of forage on any area by livestock and(or) wildlife without reference to permitted or recommended use.

ALLOTMENT-Area of land designated and managed for livestock grazing.

ALLOTMENT MANAGEMENT PLAN (AMP)-Document program which applies to livestock operations on the public lands, prepared in consultation, cooperation, and coordination with the permittee(s), lessee(s), or other affected interests.

ALTERNATIVE-One of several policies, plans or projects proposed to formulate alternatives and to estimate various impacts and effects.

ANIMAL UNIT MONTH (AUM)-Amount of forage necessary for the sustenance of one animal for one month, e.g., one deer for one month equals one deer AUM.

AQUATIC-Living or growing in or on a stream or other water body or source.

AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)-An area where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes or to protect life and safety from natural hazards.

AREAS OF CRITICAL MINERAL POTENTIAL (ACMP)-Area identified and nominated by the public as having significant mineral potential. In this case, significant means that the mineral resources are important to the local, regional, or national economy or could become important in the future.

BASEFLOW-Water that enters stream channel from springs or ground water seepage.

BASIN-Land area drained by a river and its tributaries.

BEDROCK-Any solid rock underlying soil, sand, clay, silt, and any other earthly materials.

BIG GAME-Larger species of wild animals that are hunted, such as elk, deer, bighorn sheep, and pronghorn antelope.

BOARD FOOT-Measure of amount of timber equivalent to a piece 12" x 12" x 1".

CARRYING CAPACITY-Also known as stocking rate; estimate of maximum number of animals (expressed in AUMs) a given area can support each year without inducing damage to vegetation or related resources.

CHANNEL EROSION-Process of eroding perennial or intermittent drainage channel and banks by natural forces of flowing water.

CHEMICAL WATER QUALITY-Measurements of chemical parameters (alkalinity, dissolved oxygen, dissolved iron, etc.) used to describe water quality.

CHERRYSTEM-Fingerlike intrusions into a WSA that are not part of the WSA; for example, an access road.

CIST-Box or chest especially used for sacred utensils in prehistoric tombs or caskets.

CLEAR CUTTING-Even-aged silvicultural system in which old crop is cleared at one time; regeneration is generally natural through seeding from adjacent stands or from cone-bearing slash.

COAL UNSUITABILITY CRITERIA-Regulations developed by BLM which use ability of an

area's surface resources to accept or absorb impacts of coal mining activities as means to determine suitability or unsuitability of area for coal mining.

CONTRAST-Effect of striking difference in form, line, color, or texture of landscape features within area being viewed.

CRITICAL RANGE-Range on which species depends for survival; there are no alternative ranges available due to climate conditions or other limiting factors.

CRUCIAL WINTER RANGE-That portion of winter range to which wildlife species are confined during periods of heaviest snow cover.

CULTURAL RESOURCES-Those fragile and nonrenewable remains of human activity, occupation, or endeavor reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture, and natural features that were of importance in human events. Consist of (1) physical remains, (2) areas where significant human events occurred--even though evidence of event no longer remains, and (3) environment immediately surrounding resource.

CULTURAL RESOURCE INVENTORY-Descriptive listing and documentation, including photographs and maps, of cultural resources; included are processes of locating, identifying, and recording sites, structures, buildings, objects, and districts through library and archival research, information from persons knowledgeable about cultural resources, and varying levels of intensity of on-the-ground field surveys.

CULTURAL RESOURCE SITE-Physical location of past human activities or events. Cultural resource sites are extremely variable in size and range from location of single cultural resource object to cluster of cultural resource structures with associated objects and features. Prehistoric and historic sites that are recorded as cultural resources have sociocultural or scientific values and meet general criterion of being more than 50 years old.

CULTURAL SURVEYS-

Class I: Review and compilation of known cultural resource data.

Class II: Sample-oriented field inventory (3% to 15%).

Class III: Complete surface inventory of specific area (intensive--100%).

CURRENT-Refers to 1984 when used in this RMP.

CURRENT AUTHORIZED USE-Current active grazing preference (in AUMs).

CURRENT ACTIVE PREFERENCE-Total number (active and suspended nonuse) of AUMs of livestock grazing on public land apportioned and attached to base property owned or controlled by a permittee.

DIRECTIONAL DRILLING-Drilling borehole wherein course of hole is planned before drilling. Such holes are usually drilled with rotary equipment at an angle to the vertical and are useful in avoiding obstacles or in reaching side areas.

DIVERSITY-Relative degree of abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area.

EASEMENT-Right afforded a person or agency to make limited use of another's real property for access or other purposes.

ECOLOGICAL-Pertaining to subspecies or race that is especially adapted to particular set of environmental conditions.

ECOSYSTEM-A community which includes all component organisms, together with associated environmental factors, and forms an interacting system.

EGRESS-Act or right of coming out.

EMPHASIS AREA-Area where particular resource such as wildlife habitat, would receive management emphasis or priority; it is either unique, significant, or best suited for development, management, use, or protection of a resource. Principles of multiple use and sustained yield would be maintained in each emphasis area; in addition, many different uses are allowed. Other land uses would have limits placed on them to prevent conflicts with the priority resource.

ENVIRONMENTAL ASSESSMENT (EA)-Analysis of all actions and their predictable short- and long-term environmental effects, which include physical, biological, economic, and social factors and their interactions.

ENVIRONMENTAL IMPACT STATEMENT (EIS)-Version of the statement of environmental effects required for major Federal actions under Section 102 of NEPA and released to the public and other agencies for comment and review. It is a formal document that must follow requirements of NEPA, CEQ guidelines, and directives of the agency responsible for the proposed project or plan.

EROSION CONDITION CLASS-Classification system for ranking soil erosion in increments of 20 points: 0-20 = stable; 21-40 = slight; 41-60 = moderate; 61-80 = critical; and 81-100 = severe.

EXCAVATION-Controlled scientific removal of artifacts and recording of data from subsurface cultural resource deposits.

EXTENSIVE RECREATION MANAGEMENT AREA (ERMA)-In these areas, significant recreation opportunities and problems are limited and intensive recreation management is not required. Minimal management actions are adequate.

EYRIE-Nesting site of bird of prey, as an eagle or a hawk.

FARMLANDS-Arable lands currently under cultivation.

FLOODPLAIN-Nearly level alluvial plain that borders a stream and is subject to inundation during high water. Minimum area included is that subject to a 1% (100-year recurrence) or greater chance of flooding in any given year.

FLUVIAL-Of or pertaining to rivers.

FORAGE-All browse and herbaceous foods that are available to grazing animals; may be grazed or harvested for feeding.

FOREGROUND-MIDDLEGROUND-Area visible from a travel route, use area, or other observer position from a distance of 3 to 5 miles (VRM term).

FOREST SET-ASIDES-Productive forest lands that, because of other conflicts, are withdrawn from the BLM allowable harvest base.

GABION-Wire mesh basket filled with rocks and used to protect erodible streambanks or used to create dams, deflectors, or other instream structures.

GRAZING SYSTEM-Systematic sequence of grazing treatments applied to an allotment to reach identified multiple use goals or objectives by improving quality and quantity of vegetation.

GRAZING TREATMENT-Prescription under a grazing system which grazes or rests a unit of land at particular times each year to attain specific vegetation goals.

GROUND COVER (SOIL)-Material covering soil and providing protection from, or resistance to, impact of raindrops, expressed in percent of area covered. Composed of vegetation, litter, erosion pavement, and rock.

GROUND WATER-Subsurface water occupying saturation zone, from which wells and

springs are fed (strictly speaking, only refers to water below water table).

HABITAT-Specific set of physical conditions that surround single species, group of species, or large community. In wildlife management, major components of habitat are food, water, cover, and living space.

HABITAT MANAGEMENT PLAN (HMP)-Written and officially approved plan for specific geographic area which identifies wildlife habitat and related objectives, establishes consequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

IMPACT DREAMATION-Artful process of neorealistic airgrabulation of datum and colonically projecting the ramifications of cosmic reality in an analytical format.

IMPRINTS-Evidence of past presence, such as a foot bridge across a creek in an otherwise pristine setting.

INGRESS-Act of entering.

INTENSIVE MANAGEMENT-Managing vegetation or other resource through a system to obtain desired results.

INTERMITTENT STREAM-Stream which flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow in mountainous areas.

INTERPRETIVE SITES-Developed site at which broad range of natural or cultural history is interpreted or described for public enjoyment.

KNOWN GEOLOGIC STRUCTURE (KGS)-Trap in which an accumulation of oil and gas has been discovered by drilling and which is determined to be productive, the limits of which include all acreage that is presumptively productive (43 CFR 3100.0-5[a]). If lands are underlain by a "known geologic structure" (KGS), they may be leased only through a competitive system.

KNOWN RECOVERABLE COAL RESOURCE AREA (KRCRA)-Area that includes Federal lands that meet minimum standards for recoverable coal accordance with accepted mining practices, as determined by the Director of the USGS. The Federal lands in a KRCRA are classified for coal leasing.

LEASABLE MINERALS-Minerals such as coal, oil shale, oil and gas, and all other minerals that may be acquired under the Mineral Leasing Act of 1920, as amended.

LEASE-Instrument through which interests are transferred from one party to another, subject to certain obligations and considerations.

LICENSED USE-Active use AUMs that a permittee has paid for during given grazing period.

LITHIC SCATTER-Stone debris left as result of tool manufacture or reshaping.

LOCATABLE MINERALS-Minerals that may be acquired under the Mining Law of 1972, as amended.

MBF-One thousand board feet of timber.

MESA-A tableland, a flat-topped mountain or other elevation bounded on at least one side by a steep cliff.

MITIGATION-Alleviation or lessening of possible adverse effects on a resource by applying appropriate protective measures or adequate scientific study.

MMBF-One million board feet of timber.

MULTIPLE USE-Management of public lands and their various resource values so they are used in the combination that will best meet the present and future needs of the American people.

NATIONAL REGISTER OF HISTORIC PLACES-Official list, established by the Historic Preservation Act of 1966, of the nation's cultural resources worthy of preservation.

NATURALNESS-Refers to area which "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable" (Sec. 2[c] of the Wilderness Act of 1964).

NO ACTION ALTERNATIVE-Most likely condition expected to exist in the future if current management would continue unchanged.

NORMAL YEAR FIRE PLAN-Overall fire suppression plan of given geographic area for one calendar year.

OFF-ROAD VEHICLE (ORV)-Any motorized vehicle capable of, or designed for travel on or immediately over land, water, or other natural terrain, where no road exists.

OPERABLE WOODLAND-Forest lands bearing or capable of bearing vegetation products of commercial character and economically available now or prospectively for commercial use and not otherwise withdrawn from such use.

OUTSTANDING NATURAL AREA-(43 CFR 2071.1)-Areas of outstanding scenic splendor, natural wonder or scientific importance that merit special attention and care in management to insure their preservation in their natural condition. These usually are relatively undisturbed, representative of rare botanical, geological, or zoological characteristics of principle interest for scientific research purposes.

PALEONTOLOGY-Science dealing with life and past geologic periods as known from fossil remains.

PERENNIAL WATER-Bodies of water or streams that contain water yearlong.

PERMITTEE-One who holds permit to graze livestock on public land.

PETROGLYPH-Picture or hieroglyph incised or carved into a surface, usually stone.

PICTOGRAPH-Picture or hieroglyph painted on some surface, usually stone (figures, characters, or writing which is difficult to decipher, originally referred to the Egyptian).

PLANNING CRITERIA-Criteria prepared to guide planning process and management direction.

PLANT VIGOR-State of health of a plant or capacity of plant to respond to growing conditions, to make and store food, and to complete reproductive stages.

POTHUNTING-Slang term used by professional archaeologists to describe illegal or nonprofessional relic collecting.

PREFERENCE RIGHT LEASE-Right of applicant to apply for resources in public lands before general public. For example, an applicant who had discovered a mineral deposit under a prospecting permit might be allowed a preference right lease over any other lease applicant.

PUBLIC ISSUE-Subject or question of widespread public discussion or interest regarding management of public land (BLM administered) and identified through public participation.

PUBLIC LAND-Vacant, unappropriated, and unreserved lands which have never left Federal Ownership; also, lands in Federal ownership which were obtained by the Government in exchange for public lands or for timber on public lands (also land administered by BLM).

RANGE ALLOTMENT-Area designated for use of prescribed number of cattle or sheep or by common use of both under one management plan.

RANGE IMPROVEMENT-Structure, development, or treatment used to rehabilitate, protect, or improve public lands to enhance range resource.

RANGELAND MONITORING PROGRAM-Program designed to measure changes in plant composition, ground cover, animal populations, and climatic conditions on public rangeland. Vegetation studies, used to monitor changes in rangeland condition and determine reason for any changes that are occurring, consist of actual use, utilization, trend, and climatic conditions.

RANGE SITE-Distinctive kind of rangeland that differs from other kinds of rangeland in its potential to produce native plants.

RAPTOR-Birds of prey with sharp talons and strongly curved beaks; e.g., hawks, owls, vultures, eagles.

RECLAMATION-Returning disturbed lands to form and productivity that will be ecologically balanced and in conformity with a predetermined land management plan.

RECREATION OPPORTUNITY SPECTRUM (ROS)-Continuum used to characterize recreation opportunities in terms of setting, activity, and experience opportunities.

RECREATION VISITOR DAY (RVD)-Aggregation of 12 visitor hours, where a visitor hour is the presence of one or more person on lands and water for outdoor recreation purposes for continuous, intermittent, or simultaneous periods aggregating 60 minutes; e.g., one person for one hour.

RESEARCH NATURAL AREA (RNA)-Area that is established and maintained for primary purpose of research and education because the land has threatened or endangered plant or animal species. A biological unit in which present natural conditions are maintained by allowing natural biological processes to prevail without human intervention.

RINCON-Drainage basin, somewhat shallow, surrounded on three sides by low vertical rock rims (or a sequence of such rims).

RIPARIAN-Situated on or pertaining to bank of river, stream, or other body of water. Normally used to refer to plants of all types that grow rooted in watertable of streams, ponds, and springs.

RIPARIAN COMMUNITIES-Vegetation communities found in association with either open water or water close to surface; includes meadows, aspen, and other trees and shrubs in association with streams and other water sources.

RIPARIAN HABITAT, AQUATIC-Vegetation communities found in association with streams (both perennial and intermittent), lakes, ponds and other open water. This unique habitat, comprising less than 1 percent of land area, is crucial to continued existence of the fish species known to occur. Streamside vegetation maintains high water tables, stabilizes streambanks, creates quality fishery habitat, and maintains water quality. It is also essential to most terrestrial wildlife species.

RIPARIAN HABITAT, TERRESTRIAL-Vegetation communities found in association with either open water or water close to surface; includes such habitat features as meadows, aspen stands, and(or) other trees and shrubs. This unique habitat is crucial to continued existence of majority of terrestrial wildlife species known to occur. Many species are found no where else.

ROAD-Vehicle routes which have been improved and maintained by mechanical means to insure relatively regular and continuous use.

ROADLESS-Refers to absence of roads that have been improved and maintained by mechanical means to insure relatively regular and continuous use (a way maintained by vehicle passage does not make up a road).

SCENIC QUALITY-Degree of harmony, contrast, and variety within a landscape.

SCOPING PROCESS-Early process for determining scope of issues to be addressed and for identifying significant issues related to proposed action.

SEDIMENT YIELD-Amount of sediment given up by watershed over specific time period, usually a year. Ordinarily, it is expressed as tons, acre feet, or cubic yards of sediment per unit of drainage area per year.

SEDIMENTATION-Act or process of depositing material, such as water, depositing suspended soil particles in an area, such as stream bottom.

SHEET EROSION-Removing a fairly uniform layer of soil from land surface by runoff water, without developing conspicuous water channels.

SOIL CLASSIFICATION-Systematic arrangement of soils into groups or categories on basis of their characteristics.

SOLITUDE-(1) State of being alone or remote from habitation, isolation; (2) lonely, unfrequented, or secluded place.

SPECIAL RECREATION MANAGEMENT AREA (SRMA)-Areas requiring explicit recreation management to achieve BLM's recreation objectives and to provide specific recreation opportunities.

SPECIES, ENDANGERED-Animal or plant whose prospects of survival and reproduction are in immediate jeopardy, and as is further defined by the Endangered Species Act of 1973, as amended.

SPECIES, SENSITIVE-Designation which is (1) applied to species not yet officially listed but which are undergoing status review or are proposed for listing according to Federal Register notices published by the Secretary of the Interior; (2) applied to species whose populations are consistently small and widely dispersed or whose ranges are restricted to a few localities, such that any appreciable reduction in numbers, habitat availability, or habitat condition might lead toward extinction; or (3) applied to species whose numbers are declining so rapidly that official listing may become necessary as a conservation measure.

SPECIES, THREATENED-Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, and as is further defined by the Endangered Species Act of 1973, as amended.

SUITABLE COMMERCIAL FOREST LANDS-Commercial forest lands determined to be suitable for timber production as identified in the TPCC process.

SUSTAINED YIELD-Achievement and maintenance in perpetuity of high level of annual or regular periodic output of various renewable resources of public lands consistent with multiple use.

SYNOPTIC (METEOROLOGY)-Data gathered from a large area, used primarily in weather forecasting.

TIMBER PRODUCTION CAPABILITY CLASSIFICATION (TPCC)-Process of partitioning forest land into major classes indicating relative suitability to produce timber on a sustained yield basis.

TOTAL DISSOLVED SOLIDS (TDS)-Total amount of dissolved material, organic and inorganic, contained in water or wastes.

TOTAL SUSPENDED PARTICULATES (TSP)-Portion of total particulate matter in atmosphere consisting of particles so small (< 50 microns in diameter) that they settle out slowly.

TREND-Direction of change in range condition over a period of time, expressed as upward, static, or downward.

UNALLOTTED ALLOTMENT-Allotment where a previous permittee has relinquished preference or BLM has canceled preference. Not currently used by livestock.

UNDERSTORY-Plants growing beneath canopy of other plants; usually refers to grasses, forbs, and low shrubs under tree or brush canopy.

UNIVERSAL SOIL LOSS EQUATION (USLE)-Empirical erosion model, originally designed for agricultural situations that computes long-term average soil losses from sheet and rill erosion under specific conditions.

UTILITY CORRIDOR-Tract of land varying in width forming passageway through which various commodities such as oil, gas, and electricity are transported.

UTILIZATION-Portion of current year's forage production that is consumed or destroyed by grazing animals. May refer either to single species or to vegetation as a whole.

VEGETATION-Plants in general or sum total of plant life above and below ground in area.

VEGETATION CONDITION-Condition rating based on amount of forage (lb/ac) currently produced on an allotment in relation to its potential forage production (lb/ac).

VEGETATION CONDITION INVENTORY-Inventory conducted which includes field mapping of range sites by condition class for individual grazing allotments. This information was used to determine initial carrying capacities by allotment.

VEGETATION MANIPULATION-Alteration of present vegetation by using fire, plowing, spraying, or other means to manipulate natural successional trends.

VEGETATION TYPE-Plant community with immediately distinguishable characteristics based upon and named after apparent dominant plant species.

VISUAL RESOURCE-Land, water, vegetation, animal, and other visible features.

VISUAL RESOURCE MANAGEMENT (VRM)-Planning, designing, and implementation of management objectives to provide acceptable levels of visual impacts for all BLM resource management activities.

VISUAL SENSITIVITY-Degree of concern expressed by user toward scenic quality and existing or proposed visual change in particular characteristic landscape.

WATERSHED-Total area of land above given point on waterway that contributes runoff water to flow at that point.

WAY-Track that is maintained solely by passage of vehicles.

WILDCAT DRILLING-To drill and develop unproven ground far from previous production, generally of a risky nature.

WILDERNESS-Definition contained in Sec. 2(c) of the Wilderness Act of 1964 (78 Stat. 891): A wilderness in contrast with those areas where man and his own works dominate the landscape is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean. . .an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological or other features of scientific, educational, scenic, or historical values.

WILDERNESS CHARACTERISTICS-Identified by Congress in the 1964 Wilderness Act: namely, size, naturalness, outstanding

opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values such as geological, archaeological, historical, ecological, scenic, or other features. It is required that the area possess at least 5,000 acres or more of contiguous public land or be of a size to make practical its preservation and use in an unimpaired condition; be substantially natural or generally appear to have been affected primarily by the forces of nature, with the imprint of man being substantially unnoticeable; and have either outstanding opportunities for solitude or a primitive and unconfined type of recreation. Congress stated that a wilderness area may also have supplemental values.

WILDERNESS MANAGEMENT POLICY-Policy document prescribing the general objectives, policies, and specific activity guidance applicable to all designated BLM wilderness areas. Specific management objectives, requirements, and decisions implementing administrative practices and visitor activities in individual wilderness areas are developed and described in the wilderness management plan for each unit.

WILDERNESS STUDY AREA (WSA)-Roadless area of land that has been inventoried and found to have wilderness characteristics as described in Section 603 of FLPMA and Section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

WILDERNESS VALUES-Wilderness characteristics and multiple resource benefits of an area.

WILD HORSES-All unbranded and unclaimed horses and their progeny that have public lands on or after December 15, 1971, or that do use these lands as all or part of their habitat.

WILDLIFE HABITAT-Sum total of environmental conditions of specific place occupied by wildlife species or population of such species.

WILDLINGS-Tree or shrub suitable for landscape design.

WINTER RANGE-Area occupied by animal species during winter.

WOODLAND-Land that supports forest species, generally referred to as fuelwood, sold on cord or post basis.

WOODLAND PRODUCTION CAPABILITY CLASSIFICATION (WPCC)-Process of partitioning woodlands into major classes indicating relative suitability to produce woodland products on sustained yield basis.

ACRONYMS

ACEC - Area of Critical Environmental Concern
ACMP - Area of Critical Mineral Potential
AMP - Allotment Management Plan
AUM - Animal Unit Month
BIA - Bureau of Indian Affairs
BLM - Bureau of Land Management
BMP - Best Management Practices
CDOW - Colorado Division of Wildlife
CEQ - Council on Environmental Quality
CFR - Code of Federal Regulations
CRMP - Cultural Resource Management Plan
DEIS - Draft Environmental Impact Statement
DOE - Department of Energy
EA - Environmental Analysis
EIS - Environmental Impact Statement
EPA - Environmental Protection Agency
ERMA - Extensive Recreation Management Area
FEIS - Final Environmental Impact Statement
FLPMA - Federal Land and Policy Management Act (also known as BLM's Organic Act; 1976)
GEM - Geological, Energy, and Minerals (Reports)
GMU - Game Management Unit (CDOW)
HMP - Habitat Management Plan
IMP - Interim Management Policy
KGS - Known Geologic Structure
KRCRA - Known Recoverable Coal Resource Area
MBF - Thousand Board Feet
mcf - Thousand Cubic Feet
MFP - Management Framework Plan
MMBF - Million Board Feet
mmcf - Million Cubic Feet
MSA - Management Situation Analysis
NEPA - National Environmental Policy Act
NRDC - Natural Resource Defense Council
NRHP - National Register of Historic Places
NWPS - National Wilderness Preservation System
ONA - Outstanding Natural Area
ORV - Off-Road Vehicle
PL - Public Law
PSD - Prevention of Significant Deterioration
RMP - Resource Management Plan
RNA - Research Natural Area
ROS - Recreation Opportunity Spectrum
ROW - Rights-of-Way
R&PP - Recreation and Public Purposes
RVD - Recreation Visitor Day
SCS - Soil Conservation Service
SJNF - San Juan National Forest
SJRA - San Juan Resource Area
SJ/SM - San Juan/San Miguel
SRMA - Special Recreation Management Area
TDS - Total Dissolved Solids
T&E - Threatened and Endangered (species)
TSP - Total Suspended Particulates
USC - United States Code
USFS - United States Forest Service
USFWS - U.S. Fish and Wildlife Service
USLE - Universal Soil Loss Equation
VRM - Visual Resource Management
WO - Washington Office
WSA - Wilderness Study Area(s)

APPENDICES

APPENDICES

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APPENDIX ONE

BLM-FOREST SERVICE EXCHANGE

I. Introduction

II. Historic Background and Other Information

III. Table 1-1.

IV. Table 1-2.

V. Management Guidelines

Map 1. (BLM) Dolores below Bradfield Ranch

Map 2. (FS) Dolores above Bradfield Ranch
(FS) Little Bauer
(BLM) Mancos Hill

Map 3. (BLM) Animas River Tributaries
(FS) Animas Leg

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(FS) Haystack
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(FS) Chromo-Navajo River

Introduction

The BLM/USFS jurisdictional transfer between the San Juan Resource Area and the San Juan National Forest (effective October 31, 1983) involves parcels of land in six counties of southwestern Colorado. These exchange lands are shown on maps 1 through 4. Table I-I depicts the jurisdictional transfer by area and county and acres presently administered by either the BLM/USFS.

Historic Background

On March 2, 1907, the San Juan National Forest was established by Presidential Proclamation. Initially, management direction emphasized sustained yield management of timber resources, but subsequently evolved into multiple use resource management principles.

Preceding the Taylor Grazing Act of 1934, management of public land was primarily a custodial activity. Established by this act, the Grazing Service organized grazing districts and permitted allotments to specific operators. In 1946 this service was united with the General Land Office to form the BLM. Although the BLM began as a multiple use oriented agency, it did not receive its Congressional mandate until 1976 with the passage of FLPMA.

Original National Forest boundaries were hastily developed using unsatisfactory survey plots, resulting in awkward boundaries which became even more incongruous as development took place. As time went on, both the BLM and the USFS recognized that by consolidating intermingled and adjacent lands, a more efficient type of management could be attained.

1972-1975: Management Framework Plans (MFPs)

Between 1972 and 1975, the BLM completed MFPs for public land in the San Juan Resource Area. A Lands Activity Plan was developed to implement the MFPs. An important element of this Activity Plan was a proposal for jurisdictional transfer of lands between the USFS and the BLM.

Evaluation of these transfers was conducted jointly by the two agencies. Lands in nine geographic areas were identified for potential transfer and, in October 1975, the San Juan National Forest was selected for a pilot study.

1975-1976: Land and Mineral Reports

A land report, completed in August 1976, resulted in recommendations for the transfer of 31,607 acres from the USFS to BLM and 24,763 acres from BLM to the USFS. These recommendations were reviewed, amended, and approved in December 1976. Mineral reports were also completed in August 1976.

Table 1-1. Public Land Transferred Through Public Law 98-141.

Area and county	Acres transferred to BLM	Acres transferred to FS
Dolores River Canyon below Bradfield Ranch (Dolores and San Miguel counties)	22,717.30	
Dolores River above Bradfield Ranch (Montezuma County)		4,124.85
Mancos Hill (Montezuma County)	562.98	
Little Bauer Reservoir (Montezuma County)		39.57
Animas Leg (La Plata and San Juan counties)		13,109.00
Animas River Tributaries (San Juan County)	8,327.00	
Lemon-Vallecito Lakes (La Plata County)		5,898.80
Haystack Mountain (Archuleta County)		680.13
Pagosa Springs (Archuleta County)		516.32
Chromo-Navajo River (Archuleta County)		394.16
Total	31,607.28	24,762.83

Source: BLM Data 1984.

During preparation of the land and mineral reports, public participation activities were conducted to facilitate public awareness of the recommendations. Special presentations were made to Federal, State, county, and local officials and to the news media.

1976-1977: Environmental Analysis Report (EAR)

The BLM and the USFS jointly prepared an EAR to analyze the impacts of the proposed transfers. Analysis criteria focused on location, public benefits, similarities in physical character of the lands, and opportunities for more efficient resource management. Upon completion of the report, favorable recommendations were approved and forwarded to Washington, D.C., in January 1977.

1978: Memorandum of Understanding (MOU)

Interim management procedures for proposed transfer lands were mutually agreed upon and coordinated between BLM and the USFS.

A MOU was approved in January 1978 to remain in effect until Congress passed legislation enabling jurisdictional transfers between the departments of Agriculture and Interior.

1978-1983: Legislation

In January 1978, Washington officials of BLM and the USFS prepared draft legislation for jurisdictional transfers between the San Juan National Forest and BLM's San Juan Resource Area. Pending for more than five years, this legislation was acted upon with the passage of Public Law 98-141, The Public Lands and National Parks Act of 1983, signed by President Reagan on October 31, 1983. (Sec. 12, 97 Stat. [a-h] 909 of this Act covers land transfers discussed in this document.)

Management Guidelines

Management actions on the recently exchanged BLM/USFS land will remain generally the same. All existing mining claims, grazing rights, and permits will be honored by the new managing agencies. However, permits must follow regulations governing each jurisdiction.

Each agency has management prescriptions (USFS) or emphasis areas (BLM) related to specific areas (see Table 1-2). Although all parcels of land exchanged will continue to be managed much the same, the two agencies will apply their respective guidelines to the areas involved.

Forest Service lands are managed under Forest Direction and Management Area Direction detailed in the Land and Resource Management Plan for the San Juan National Forest (issued September 29, 1983, USDA-Forest Service).

Forest Direction consists of goals, objectives, and management requirements (see Chapter III, p. III-11 - III-84, Forest Plan). The goals and objectives provide broad overall direction regarding the type and amount of goods and services that the Forest will provide. The management requirements contained in the Forest Direction section set the minimum conditions that must be maintained while achieving the goals and objectives.

Management Area Direction consists of management area prescriptions applicable to specific management areas shown on the Forest Plan and alternative maps and on the maps showing lands transferred to the USFS (found in this Appendix). The management area prescriptions contain management requirements specifying which activities will be implemented to achieve the goals and objectives. Management requirements contained in individual management area prescriptions are applied to the specific areas shown on the alternative maps and on the Forest Plan map, as well as on the maps found in Appendix One (see Chapter III, San Juan National Forest Plan, p. III-88 - III-291). Alternative maps are found in the final EIS for the Forest Plan; the Forest Plan map is found in the Forest Plan. Table 1-2 compares the BLM emphasis areas and corresponding USFS prescriptions.

Table 1-2. Comparison Between USFS and BLM Management Prescriptions/Emphasis Areas.

BLM - Emphasis area(s)[1/]	USFS - Management prescription[2/]
A - Management direction emphasizes increasing livestock production on a sustained yield basis. Livestock improvements will be multiple use oriented. Compatible resource uses are possible.	6B - Emphasis is on livestock management. A variety of forage improvement practices are available for implementation. Compatible resource uses are possible.
B - Management direction emphasizes achieving and maintaining optimum habitat conditions for wildlife. Wildlife improvements are utilized to improve watershed conditions and provide vegetation diversity to maximize habitat capability. Compatible resource uses are possible but favor wildlife.	4B - Emphasis is on habitat needs for management indictor species. A variety of tree harvesting and rangeland vegetation treatments is possible for maximization of habitat capability. Human activities are regulated to favor the designated species.
	5B - Emphasis is on big game winter range (forage and cover) in forested areas. A full range of treatments for tree stands, browse, and rangeland plants is available for implementation in an effort to increase forage or to create/maintain cover. Compatible resource uses may occur. Motorized recreation use is managed to prevent conflicts during critical use periods.
C - Management provides for a variety of recreation opportunities and settings. Investments will be made in management activities which enhance recreation.	2A - Emphasis is on semiprimitive motorized recreation opportunities. Management activities are visually subordinate. Some forested lands are suitable for timber production and mineral resource activities are generally compatible.
	2B - Emphasis is for rural and roaded-natural recreation opportunities. Both motorized and nonmotorized activities are possible. Management activities maintain/improve the visual aspect of recreation opportunities. Harvest method is determined by forest cover type.

Table 1-2. (Continued)

BLM - Emphasis area(s)[1/]	USFS - Management prescription[2/]
	3A - Emphasis is for rural and roaded-natural recreation opportunities. Both motorized and nonmotorized activities are possible. Management activities maintain/improve the visual aspect of recreation opportunities. Harvest method is determined by forest cover type.
	10D - Emphasis is on river segments recommended for inclusion in the National Wild and Scenic River System.
D - Management direction allows for wilderness management to provide natural environments with the characteristic components of a wilderness setting. Natural processes proceed unrestricted by management activities or human use. High levels of solitude are emphasized. Travel is cross country or by trail system.	8A - Emphasis is for pristine biophysical conditions and a high degree of solitude.
	8B - Emphasis is for primitive biophysical conditions. Travel is cross country or by trail.
	8D - Emphasis is for wilderness management in high-density use areas, particularly along travel corridors.
J - Management direction is to increase production and utilization of wood products. Investments may be made for timber management activities. Compatible resource uses are possible but may be restricted/disrupted due to timber objectives.	7C - Emphasis is to develop and maintain healthy tree cover on steep slopes. Management activities blend with the natural setting. Roaded-natural, semiprimitive motorized, and semiprimitive nonmotorized recreation activities are provided.
	7E - Emphasis is on wood fiber and sawtimber production. Management activities will create a mosaic of stands that follow natural patterns and harmonize with the setting. Roaded-natural, semiprimitive motorized recreation patterns and harmonize with the activities are possible.

Table 1-2. (Continued)

BLM - Emphasis area(s)[1/]	USFS - Management prescription[2/]
	9A - Emphasis is on protection and maintenance of riparian areas. Vegetation treatment will enhance plant and animal diversity. Forested lands are not suitable for timber production. Semiprimitive motorized, roaded natural and rural recreation opportunities can be provided. This prescription will be applied to all riparian areas located anywhere on the Forest except those in wilderness, research natural areas, and special interest areas.

1/See corresponding BLM alternative maps.
2/See Forest Service Plan maps.
Source: BLM Data 1984.

Lemon-Vallecito Lakes

These parcels total approximately 5,900 acres of land in the Lemon-Vallecito Lakes area (see Map 4). Four alternatives were considered for the area. Each alternative was different, involving one or more of the following emphases: J-Forestry and C-Recreation.

A. Current Management

1. San Juan/San Miguel (SJ/SM) RMP

Approximately 3,200 acres of the area will be managed under a general natural resource management emphasis which does not have a preferred resource value. All other land (2,600 acres) is under acommercial forestry emphasis (Emphasis J).

2. San Juan National Forest (SJNF) Land and Resource Management Plan (Alternative F)

This area would be managed under prescriptions 7C and 7E, depending on slope. Emphasis would be on wood fiber production. Management activities are harmonized with the natural setting. Dispersed recreational opportunities are available.

B. Resource Conservation

1. SJ/SM RMP

This alternative manages all land under a general natural resource management emphasis.

2. SJNF Land and Resource Management Plan (Alternative A)

Emphasis would be on semiprimitive nonmotorized recreation under prescription 3A. Wood products are available if harvest is compatible with recreation uses.

C. Resource Utilization

1. SJ/SM RMP

The Resource Utilization Alternative recommends the majority of Lemon-Vallecito Lakes area for commercial forestry emphasis (Emphasis J).

2. SJNF Land and Resource Management Plan (Alternative B)

Emphasis would be on semiprimitive nonmotorized recreation under prescription 3A. Wood products are available if harvest is compatible with recreation uses.

D. Preferred Alternative

1. SJ/SM RMP

Lemon-Vallecito Lakes is an important area for recreation. Special guidelines were developed to manage this resource value. Management actions must maintain Class II visual standards while allowing a variety of nonmotorized recreational opportunities. ORV use would not be allowed.

2. SJNF Land and Resource Management Plan (Alternative H)

The overall area would be managed with emphasis on recreation and livestock grazing. Approximately 2,600 acres would be managed under prescription 6B (livestock grazing emphasis); 1,900 acres under 2A (semiprimitive motorized recreation); and 1,400 acres under 3A (semiprimitive nonmotorized recreation; see Map 4).

Animas Leg

This parcel consists of more than 13,000 acres south of Silverton and along the Animas River. Although four possible management alternatives were considered, BLM emphasis remains the same throughout. Each alternative names wilderness as the resource value which will be emphasized.

Most of this area will be managed by the SJNF to retain the characteristics that make it suitable for inclusion in the NWPS until Congress acts. Approximately 10,500 acres will be managed under prescription 8A for a pristine wilderness recreation setting. Another approximately 350 acres would come under prescription 8C, emphasizing wilderness character in a semiprimitive setting. In addition, approximately 800 acres would be managed under prescription 8D for high-density wilderness use, particularly along travel corridors. The remaining approximately 1,160 acres within this area, comprising the Durango-Silverton Narrow Gauge Railroad corridor, will be managed under prescription 2B with an emphasis on maintaining scenic quality. Another approximately 160 acres in the southwest corner of the area would be managed under prescription 3A, semiprimitive nonmotorized recreation (see Map 3).

Haystack Mountain

The Haystack Mountain exchange land amounts to almost 700 acres. Each of four SJ/SM RMP alternatives designates emphasis B (deer and elk winter range) as the dominant resource value.

The SJNF prescription 5B (emphasizing forage and cover on wildlife winter range) will be applied to this area under all alternatives (see Map 4).

Pagosa Springs

Located approximately 3 miles north and east of Pagosa Springs, this parcel totals over 500 acres. Within the four BLM alternatives, there are two different resource emphases considered: B (deer and elk winter range) and J (commercial forestry).

A. Current Management

1. SJ/SM RMP
   It would be managed as deer and elk winter range (Emphasis B).

2. SJNF Land and Resource Management Plan (Alternative F)

   Management under prescription 2B would emphasize rural and roaded natural recreation opportunities such as driving for pleasure, viewing scenery, and picnicking along sensitive travel routes while enhancing or maintaining scenic qualities inherent in a forest environment. Forested land is suitable for timber production.

B. Resource Conservation

1. SJ/SM RMP

   It would be managed as deer and elk winter range (Emphasis B).

2. SJNF Land and Resource Management Plan (Alternative A)

Management under prescription 2B would emphasize rural and roaded natural recreation opportunities such as driving for pleasure, viewing scenery, and picnicking along sensitive travel routes while enhancing or maintaining scenic qualities inherent in a forest environment. Forested land is suitable for timber production.

C. Resource Utilization

1. SJ/SM RMP

It would be managed under a commercial forestry emphasis (Emphasis J).

2. SJNF Land and Resource Management Plan (Alternative B)

This area would be managed under prescription 5B, emphasizing forage and cover on wildlife winter ranges. Livestock grazing is compatible but is managed to favor wildlife habitat. Forested land is suitable for timber production.

D. Preferred Alternative

1. SJ/SM RMP

It would be managed to emphasize deer and elk winter range.

2. SJNF Land and Resource Management Plan (Alternative H)

This area would be managed under prescription 5B, emphasizing forage and cover on wildlife winter ranges. Livestock grazing is compatible but is managed to favor wildlife habitat. Forested land is suitable for timber production (see Map 4).

Chromo-Navajo River

The exchange land along the Navajo River consists of approximately 400 acres. It is managed under emphasis J (commercial forestry), with Livestock Management Emphasis A as the dominant resource value.

A. Current Management

1. SJ/SM RMP

Entire parcel would be managed under a commercial forestry emphasis (Emphasis J).

2. SJNF Land and Resource Management Plan (Alternative F)

This area would be managed under prescription 6B, emphasizing production of livestock forage.

B. Resource Conservation

1. SJ/SM RMP

Entire parcel would be managed under a commercial forestry emphasis (Emphasis J).

2. SJNF Land and Resource Management Plan (Alternative A)

This area would be managed under prescription 2A, emphasizing semiprimitive motorized recreation.

C. Resource Utilization

1. SJ/SM RMP

Entire parcel would be managed under a commercial forestry emphasis (Emphasis J).

2. SJNF Land and Resource Management Plan (Alternative B)

This area would be managed under prescription 6B, emphasizing producing livestock forage.

D. Preferred Alternative

1. SJ/SM RMP

It would be managed under a livestock management emphasis (Emphasis A).

2. SJNF Land and Resource Management Plan (Alternative H)

This area would be managed under prescription 6B, emphasizing producing livestock forage (see Map 4).

Dolores River above Bradfield Ranch

The BLM has exchanged more than 4,000 acres of land around McPhee Reservoir and along the Dolores River below the dam. All alternatives recommend Recreation Emphasis Area C as the dominant resource value. In addition, Emphasis Area J (commercial forestry) is also used in one alternative. Two small parcels near Dolores will be managed under general natural resource management guidelines in each of the four alternatives.

All alternatives have special guidelines for implementation of management activities regarding recreation. Management provides a variety of recreation opportunities and investments are made in activities which enhance this resource. Important cultural values will be protected. Suitable cultural resources will be developed for public use. Development activities include interpretive signing, stabilization, and access trails. Class II visual standards will be maintained for the entire area.

A. Current Management

1. SJ/SM RMP

All lands around McPhee Reservoir would be managed primarily for its recreation values (Emphasis C). Small parcels near Dolores would be managed under a general natural resource management emphasis .

2. SJNF Land and Resource Management Plan (Alternative F)

Management would be under prescription 3A, semiprimitive nonmotorized recreation; 5B, big game winter range; 9A, riparian areas; and 10D, maintaining potential for Wild and Scenic River designation below the McPhee Dam.

B. Resource Conservation

1. SJ/SM RMP

All land around McPhee Reservoir would be managed primarily for its recreation values (Emphasis C). Small parcels near Dolores would be managed under a general natural resource management emphasis.

2. SJNF Land and Resource Management Plan (Alternative A)

Management would be under prescription 2A, semiprimitive motorized recreation; 3A, semiprimitive nonmotorized recreation; 5B, wildlife winter range; 9A, riparian areas; and 10D, potential Wild and Scenic River corridor below McPhee Dam.

C. Resource Utilization

1. SJ/SM RMP

All land around McPhee Reservoir would be managed primarily for its recreation values (Emphasis C). Small parcels near Dolores would be managed under a general natural resource management emphasis. Approximately 100 acres near McPhee would be managed for commercial forestry (Emphasis J).

2. SJNF Land and Resource Management Plan (Alternative B)

Emphasis would be on recreation under prescription 3A; wildlife winter range under 5B; and riparian areas under 9A.

D. Preferred Alternative

1. SJ/SM RMP

All land around McPhee Reservoir would be managed primarily for its recreation values (Emphasis C). Small parcels near Dolores would be managed under a general natural resource management emphasis.

2. SJNF Land and Resource Management Plan (Alternative H)

The primary emphasis for these lands will be provision of forage and cover on winter range for wildlife, under prescription 5B, covering approximately 3,700 acres. The remaining 425 acres will be managed under 9A, riparian areas; and 10D, potential Wild and Scenic River corridor below McPhee Dam (see Map 2).

Little Bauer Reservoir

The 40-acre parcel of land around Little Bauer Reservoir carries the same resource emphasis (B--winter eagle concentration area) throughout each of the four BLM alternatives. This area will be managed under SJNF prescription 7E, wood fiber production on gentle slopes under all alternatives. This prescription provides explicit direction to avoid disruptive activities near occupied raptor nests (see Map 2).

Dolores River Canyon below Bradfield Ranch

Encompassing almost 23,000 acres of land, this large parcel is located near Dove Creek and it includes twelve miles of the Dolores River and its associated canyon topography.

A. SJNF Proposed Action (Prescriptions 3A, 4B, 5B, 10D)

The Final Plan for the San Juan National Forest describes approximately 10,000 acres of the area to be managed under two wildlife prescriptions. Southeast of Mountain Sheep Point, the area will be managed for a specified indicator species. A variety of vegetation treatments are available for maximization of habitat capability. Human activities are regulated to favor the chosen species. The area northwest of Mountain Sheep Point is proposed for a big game winter range area. A full range of treatments to be used in forested areas is possible for implementation to create and maintain cover or increase available forage. Motorized recreation use may be limited during critical use periods. The remaining land is managed to provide semiprimitive nonmotorized recreation opportunities. Within this sector, there are stipulations for protecting the Dolores River Canyon.

B. BLM Coordinating Management

The SJ/SM RMP proposes to implement the following emphasis areas and management guidelines to the appropriate areas (see Map 1).

Emphasis	Management guidelines
C	Recreation - Maintain Class II visual standards - Manage for a variety of recreation opportunities

Emphasis	Management guidelines
C	Recreation (Continued) - Restrict ORV use to existing roads and trails - Provide for no-surface occupancy for oil and gas leasing to Dolores River Canyon - Protect and manage important cultural resources through interpretive signing
A	Livestock Management - Manage for increased, sustained livestock production and invest in range improvements if necessary - Manage woodland areas to enhance range resource - Allow motorized ORV use on existing roads and trails
J	Forestry - Invest necessary funds to provide for intensive management of the forest resource and lands suitable for timber production - Allow livestock grazing if compatible with timber management activities - Provide investments where uneven-aged timber management practices may also benefit wildlife

Mancos Hill

This small parcel of land (approx. 560 acres) is four miles east of Mancos along U.S. Highway 160.

A. SJNF Proposed Action (Prescriptions 5B and 6B)

In the Final Plan for the SJNF, the Mancos Hill area is under two management prescriptions which are almost equal in size. The livestock management emphasis allows a variety of forage improvement practices to increase production. Resource uses compatible with livestock are possible. Forested areas of the parcel are managed as big game winter range. Many treatments are available for use in enhancing forage and cover for big game. Motorized recreation may be limited during critical periods to favor wildlife.

B. BLM Coordinating Management

The SJ/SM RMP will implement a general natural resource management emphasis to the Mancos Hill area. Since no dominant resource value exists, management direction will consist of multiple use guidelines as prescribed in FLPMA and other existing laws, policies, and manuals concerning specific resource programs (see Map 2).

Animas River Tributaries

Animas River Tributaries is a high altitude land area consisting of 8,300 acres, approximately 5 miles east of Silverton.

A. SJNF Proposed Action (Prescriptions 2A and 3A)

Approximately one-half of this parcel will be managed for semiprimitive motorized recreational opportunities under the Final Plan for the SJNF. Some forested lands are suitable for timber production and mineral resource activities are generally compatible. The remaining land will emphasize semi-primitive, nonmotorized recreation activities.

B. BLM Coordinating Management

In the Animas River tributaries area, the following emphasis areas and management guidelines will be implemented to meet SJNF prescriptions. (Refer to Map 2.)

Emphasis	Management guidelines
A	Livestock Management - Continue intensive management on existing grazing allotments
C	Recreation - Manage in conjunction with Silverton SRMA to provide for wide variety of recreational opportunities - Maintain Class II visual standards - Allow ORV use but may be limited or closed in some areas to protect and maintain other resources

MAP 1

LAND TRANSFER

B L M to Forest Service

Forest Service to B L M

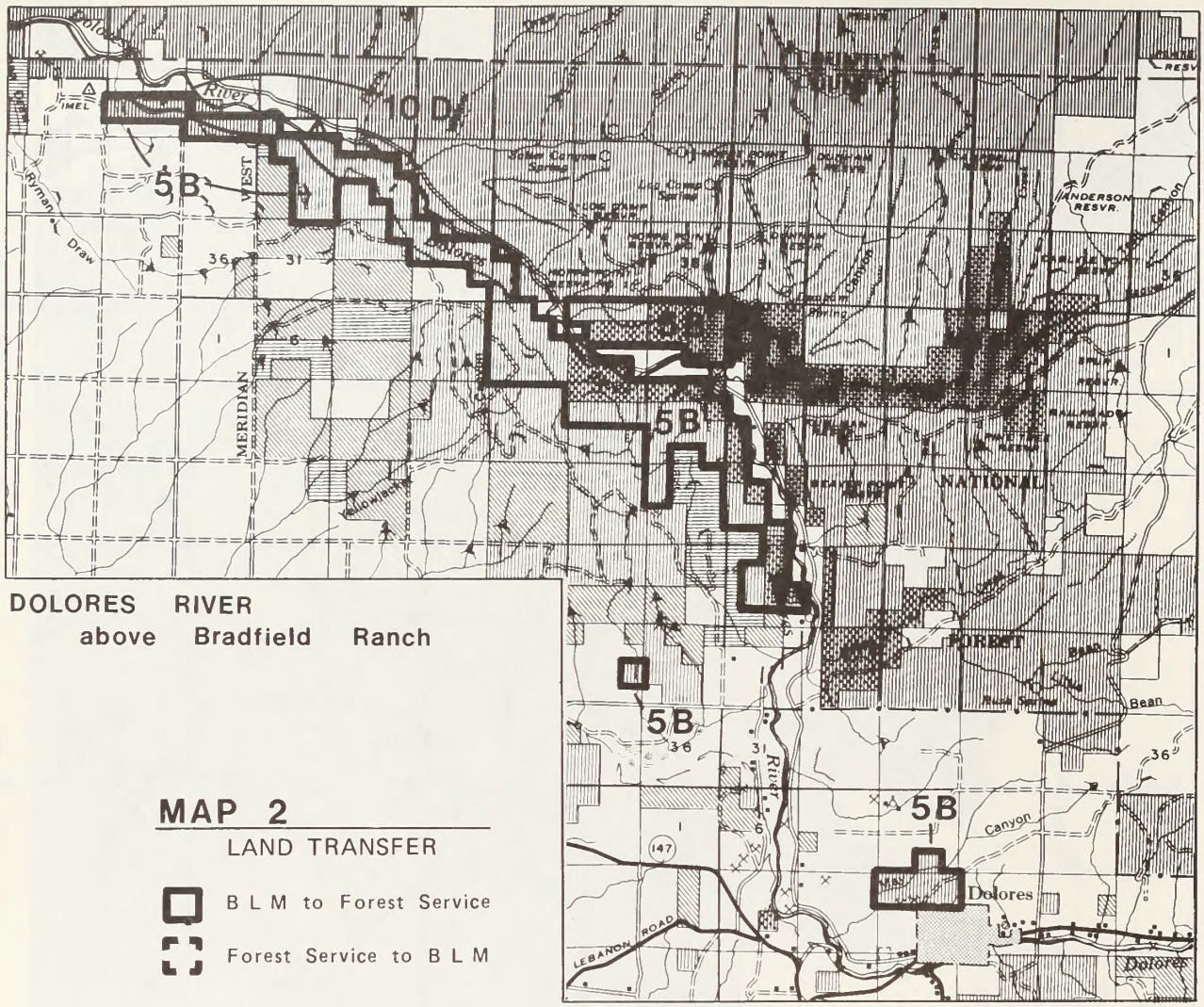
DOLORES RIVER CANYON below Bradfield Ranch

R 17 W R 16 W R 15 W

T 39 N

T 38 N

T 37 N



DOLORES RIVER
above Bradfield Ranch

MAP 2

LAND TRANSFER

B L M to Forest Service

Forest Service to B L M

0 1 2 3 4 5 6

Scale in miles

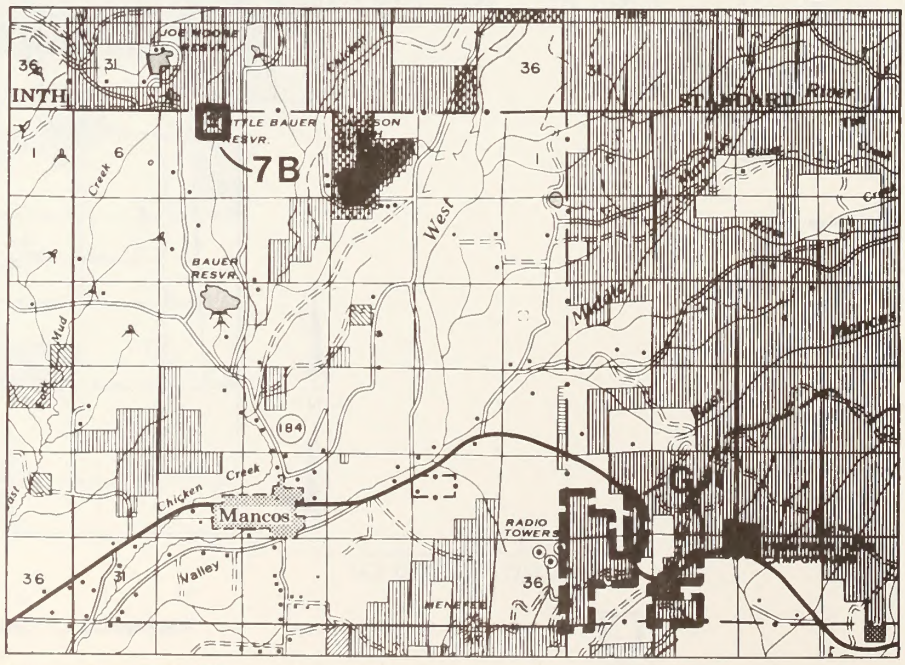
N

MINERALS OWNED BY THE FEDERAL GOVERNMENT

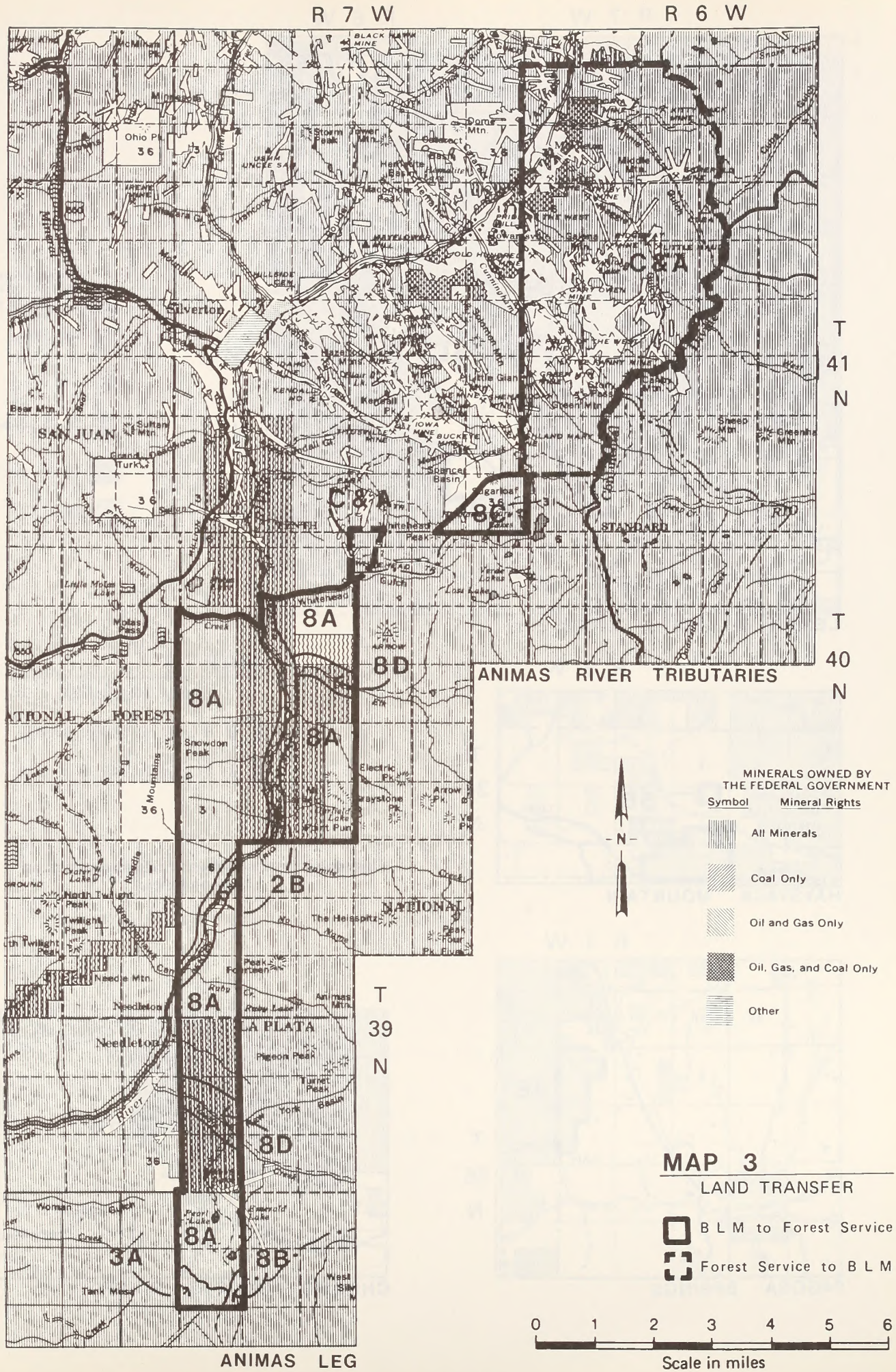
Symbol	Mineral Rights
	All Minerals
	Coal Only
	Oil and Gas Only
	Oil, Gas, and Coal Only
	Other

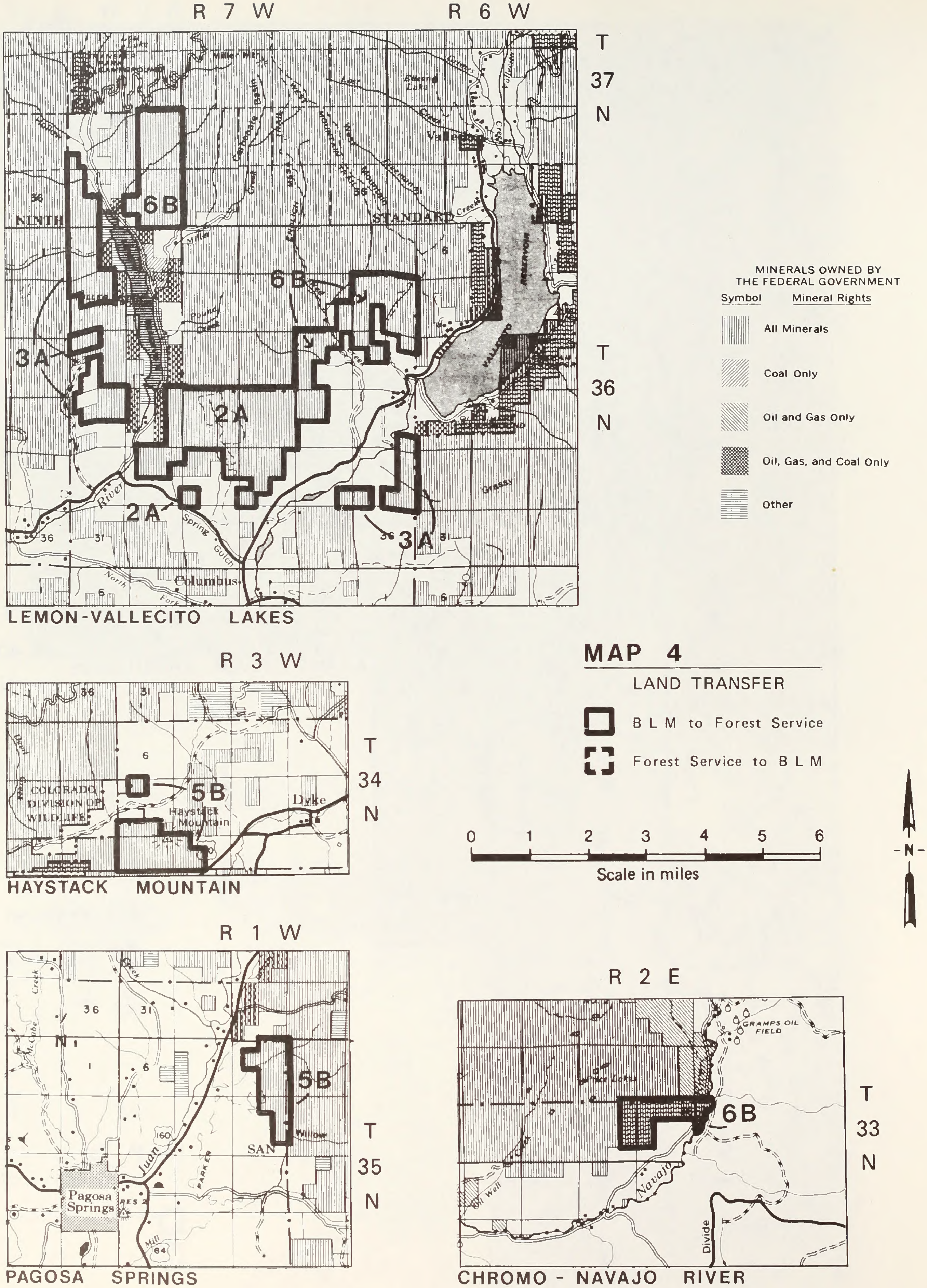
R 13 W R 12 W

T 36 N



LITTLE BAUER RESERVOIR / MANCOS HILL


R 7 W
R 6 W
T 41 N
T 40 N
T 39 N
ANIMAS RIVER TRIBUTARIES
ANIMAS LEG
C&A
8C
8A
8D
2B
3A
8B
Silverton
Ohio Pk
Dome Mtn
SAN JUAN
Turk
Sugarloaf
STANDARD
Molas Pass
Snowdon Peak
Needleton
LA PLATA
Needle Mtn
Pigeon Peak
Turret Peak
Animas Mtn
Sheep Mtn
Greenhills Mtn
Electric Pk
Arrow Pk
Twilight Peak
The Hesspitzes
Peak Four
Peak Fourteen
Emerald Lake
Pearl Lake
Tank Mtn
MINERALS OWNED BY THE FEDERAL GOVERNMENT
Symbol
Mineral Rights
All Minerals
Coal Only
Oil and Gas Only
Oil, Gas, and Coal Only
Other
N
MAP 3
LAND TRANSFER
B L M to Forest Service
Forest Service to B L M
0 1 2 3 4 5 6
Scale in miles


R 7 W
R 6 W
T 37 N
T 36 N
6B
3A
2A
2A
3A
NINTH
STANDARD
Columbus
LEMON-VALLECITO LAKES
MINERALS OWNED BY THE FEDERAL GOVERNMENT
Symbol
Mineral Rights
All Minerals
Coal Only
Oil and Gas Only
Oil, Gas, and Coal Only
Other
R 3 W
T 34 N
5B
COLORADO DIVISION OF WILDLIFE
Haystack Mountain
Dyke
HAYSTACK MOUNTAIN
MAP 4
LAND TRANSFER
B L M to Forest Service
Forest Service to B L M
0 1 2 3 4 5 6
Scale in miles
N
R 1 W
T 35 N
5B
Pagosa Springs
PAGOSA SPRINGS
R 2 E
T 33 N
6B
GRAMPS OIL FIELD
Navajo
Divide
CHROMO - NAVAJO RIVER

APPENDIX TWO

VISUAL RESOURCE MANAGEMENT (VRM) CLASSIFICATION PROCESS

Establishing VRM Classes

Four steps are involved in the visual resource management classification process. These are (1) outlining and numerical evaluation of scenic quality; (2) outlining of visual sensitivity levels; and (3) delineating distance zones; and (4) assigning VRM classes.

Scenic Quality

The first step is accomplished by outlining scenery of similar nature on a topographic map. Once the area has been outlined, numerical values are given to its key factors (landform, color, water, vegetation, uniqueness, and intrusions). When these values are established, the total determines whether the area is an A, B, or C scenery unit.

Class A scenery combines the most outstanding characteristics of each rating factor. Class B scenery combines some outstanding features and some that are fairly common to the physiographic region. Class C scenery combines features that are fairly common to the physiographic region.

Visual Sensitivity Levels

Sensitivity levels indicate the relative degree of user interest in visual resources and concern for changes in the existing landscape character. This section is designed to bring input from area and district management to the weighing of the two sensitivity criteria: (1) use volume (both vehicular and pedestrian), and (2) expressed user attitudes toward change. These criteria are evaluated from a matrix, and a final sensitivity rating of high, medium, or low is given. After this evaluation, the sensitivity rating will figure in the final VRM classification.

Distance Zones

The distance zones are outlined on topographic maps in three areas: (1) foreground/middleground, (2) background, and (3) seldom seen. The foreground/middleground zone is a distance of from zero to 3 to 5 miles away, where activities can be viewed in detail. The background is the remaining area up to 15 miles distance, and seldom seen are those areas beyond 15 miles or not seen at all from any travel corridor.

VRM Classes

After classification as to scenic quality, visual sensitivity, and distance zones, areas are assigned to one of five management classes, which are designed to maintain or enhance visual quality and describe the different degrees of modification of the basic elements of the landscape allowed.

(1) Manage VRM Class I areas to protect natural scenic quality. Design surface construction projects with low visual contrast standards.

(2) Manage VRM Class II areas to preserve natural scenic quality. Design surface construction projects with low to moderate visual contrast standards.

(3) Manage VRM Class III areas to preserve natural scenic quality. Design surface construction projects with moderate visual contrast standards.

(4) Manage VRM Class IV areas to preserve natural scenic quality. Allow strong visual contrast in project design. No special standards needed.

(5) Manage VRM Class V areas to restore damaged visual qualities. (Note: Surface construction projects include vegetation modifications, earthwork and structures.)

Analyzing Visual Impacts

For activities proposed on public lands, impacts are evaluated with the visual resource contrast rating system, a method of evaluating the visual contrast of a proposed activity with the existing landscape character.

The amount of contrast is measured by separating the landscape into its major features (land and water surface, vegetation, and structures) and then predicting the magnitude of change in contrast for each of the basic elements (form, line, color, and texture) to each of the features. Assessing the amount of contrast for a proposed activity in this manner will indicate the severity of impact and serve as a guide in determining what is required to reduce the contrast to where it will meet the visual management class's requirements for the area. Objectives for the VRM classes are listed below:

Class I. One element should not exceed a weak degree of contrast (1) and the total for any feature may not exceed 10.

Class II. The degree of contrast for any one element should not exceed a moderate value (2) and the total contrast rating for any feature may not exceed 10.

Class III. The degree of contrast of any one element should not exceed a moderate value (2) and the total contrast rating for any feature may not exceed 16.

Class IV. The total contrast rating for any feature should not exceed 20.

Class V. This is an interim classification for rehabilitation or enhancement.

APPENDIX THREE

RECREATION OPPORTUNITY SPECTRUM

Within the San Juan-San Miguel planning area, opportunities for recreation are varied and are classified according to: (1) the types of experiences that can be achieved from participation, (2) a variety of activities, (3) different environmental settings. The primary determinant of these recreation opportunity classes is the setting, which describes the overall environment in which the recreation occurs, influences specific types of activities that can occur, and ultimately determines the resulting types of experiences that users can achieve. The setting is formulated using a number of factors such as remoteness, size, amount of landscape alteration or development, the number of recreation users and their noticeability, management constraints, etc.

Six broad types or classes of recreation opportunities have been recognized on a spectrum ranging from largely natural and low use areas (resource dependent) to highly developed and intensively used areas (facility dependent). These classes are named and described as follows:

Primitive (P)	Areas lying more than three miles from the nearest point of motor vehicle access, having unmodified landscapes, where there is little evidence of other people, and that are almost completely free of management controls.
Semiprimitive Nonmotorized (SPNM)	Areas at least one-half mile from the nearest point of motor vehicle access but not as distant as three miles, having mostly natural landscapes, where there are some evidences of other people, and where there are very few management controls.
Semiprimitive Motorized (SPM)	Areas alongside or near 4-WD roads and trails, having mostly natural landscapes, where there are often evidences of other people but numbers seem to remain low, and where management controls are evident but not dominant.
Roaded Natural (RN)	Areas alongside or near improved roads where pickups and cars can be driven, having naturally appearing but modified landscapes, where there are moderate evidences and numbers of other people, and where management controls provide a sense of security.
Rural (R)	Areas alongside or near paved highways, or having heavily modified landscapes, where there may be considerable evidences or numbers of other people, and where management controls are easily seen.
Modern Urban (MU)	Areas alongside or near paved highways, or where the natural landscape is dominated or replaced by manmade developments, where there are great numbers of evidences of other people, and where management controls are numerous and dominant.

APPENDIX FOUR-A.

OIL AND GAS LEASE - SURFACE-DISTURBANCE STIPULATIONS

1. Notwithstanding any provision of this lease to the contrary, any drilling, construction or other operation on the leased lands that will disturb the surface thereof or otherwise affect the environment (hereinafter called "surface disturbing operation") conducted by lessee shall be subject, as set forth in this stipulation, to the prior approval of such operation by the District Manager, Bureau of Land Management, in consultation with the appropriate Federal Agency managing the surface and to such reasonable conditions, not inconsistent with the purpose for which this lease is issued, as the District Manager may require to protect the surface of the leased lands and the environment.

2. Prior to entry upon the land or the disturbance of the surface thereof for drilling or other purposes, the lessee shall submit for approval two copies of a map and explanation of the nature of the anticipated activity and surface disturbance to the appropriate District Manager of the Bureau of Land Management and if applicable, will also furnish the appropriate Federal Agency managing the surface with a copy of such map and explanation.

   An evaluation of the proposal will be made by the appropriate Federal Agency managing the surface for the purpose of insuring proper protection of the surface, the natural resources, the environment, existing improvements, and for assuring timely reclamation of disturbed lands.

3. Upon completion of said evaluation, the District Manager, Bureau of Land Management shall notify lessee of the conditions, if any, to which the proposed surface disturbing operations will be subject.

   Said conditions may relate but are not limited to any of the following:

   (a) The location of drilling or other exploratory or developmental operations or the manner in which they are to be conducted;

   (b) The types of vehicles that may be used and the areas in which they may be used;

   (c) The manner or location in which improvements such as roads, buildings, pipelines, or other improvements are to be constructed.

4. The plan of operation required by item 2 above must assure adequate protection of drainages, waterbodies, springs, or fish and wildlife habitat, steep slopes or fragile soil. The lessee agrees that during periods of adverse conditions due to climatic factors such as thawing, heavy rains, or flooding, all activities creating irreparable or extensive damage, as determined by the Federal Agency managing the surface, will be suspended or the plan of operation modified and agreed upon.

5. Protection of Cultural Resources

   A. Prior to undertaking any ground disturbing activities on lands covered under the provisions of this lease, the lessee shall:

      1. Contact the appropriate Bureau of Land Management office on lands managed by Bureau of Land Management or the appropriate Federal Agency managing the surface on lands where the surface is administered by such agency to determine if a site specific cultural resource inventory is required. If a survey is required, then;

      2. Engage the services of a qualified cultural resource specialist acceptable to the Federal Agency managing the surface to conduct an intensive inventory for evidence of cultural resource values;

      3. Submit a report acceptable to the authorized officer of the Federal Agency managing the surface and the Bureau of Land Management; and

      4. Implement mitigation measures required by the Federal Agency managing the surface to preserve or avoid destruction of cultural resource values. Mitigation may include relocation of proposed facilities, testing and salvage or other protective measures. Where impacts cannot be mitigated to the satisfaction of the Federal Agency managing the surface, surface occupancy on that area must be prohibited.

   B. The lessee or operator shall immediately bring to the attention of the Bureau of Land Management or the authorized officer of the Federal Agency managing the surface any cultural resources or any other object of scientific interest discovered as a result of surface operations under this lease, and not disturb such discoveries until directed to proceed by the Bureau of Land Management.

SERIAL NUMBER

In order to protect important seasonal wildlife habitat, exploration, drilling, and other development will be allowed only during the period from _____ to _____. This limitation does not apply to maintenance and operation of producing wells. Exceptions to this limitation in any particular year may be specifically approved in writing by the District Oil and Gas Supervisor of the Minerals Management Service (or his successor) with the concurrence of the appropriate District Manager of the Bureau of Land Management (or his successor).

The restrictions imposed by this stipulation apply to the following lands in the lease:

SIGNATURE OF LESSEE

REASON(S) FOR RESTRICTIONS:

Form 3730-1
(December 1975)
(formerly 3500-1)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

POWERSITE STIPULATION

The lessee or permittee hereby agrees:

(a) If any of the land covered by this lease or permit was, on the date the lease or permit application or offer was filed, within a powersite classification, reservation, or project on which an application for a license or preliminary permit is pending before the Federal Power Commission or on which an effective license or preliminary permit had been issued by the Federal Power Commission under the Federal Power Act, or on which an authorized power project (other than one owned or operated by the Federal Government) had been constructed, the United States, its permittees or licensees shall have the prior right to use such land for purposes of power development so applied for, licensed, permitted, or authorized and no compensation shall accrue to the mineral lessee or permittee for loss of prospective ts or for damages to improvements or workings, or any additional expense caused the mineral lessee as a result of the taking of said land for power development purposes. It is agreed, however, that where the mineral lessee or permittee can make adjustments of his improvements to avoid undue interference with power development, he will be permitted to do so at his own expense. Furthermore, occupancy and use of the land by the mineral lessee or permittee shall be subject to such reasonable conditions with respect to the use of the land as may be prescribed by the Federal Power Commission for the protection of any improvements and workings constructed thereon for power development.

(b) If any of the land covered by this lease or permit is on the date of the lease or permit within a powersite classification or reservation which is not governed by the preceding paragraph, the lease or permit is subject to the express condition that operations under it shall be so conducted as not to interfere with the administration and use of the land for powersite purposes to a greater extent than may be determined by the Secretary of the Interior to be necessary for the most beneficial use of the land. In any case, it is agreed that where the mineral lessee or permittee can make adjustments to avoid undue interference with power development, he will be permitted to do so at his own expense.

GPO 832-535

Serial Number

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

WILDERNESS PROTECTION STIPULATION

By accepting this lease, the lessee acknowledges that all or part of the lands contained in this lease as shown on the attached map(s) are being inventoried or evaluated for their wilderness potential by the Bureau of Land Management (BLM) under section 603 of the Federal Land Policy and Management Act of 1976, 90 Stat. 2743 (43 U.S.C. Sec. 1782), and that exploration or production activities which are not in conformity with section 603 may never be permitted. Expenditures in leases on which exploration drilling or production are not allowed will create no additional rights in the lease, and such leases will expire in accordance with law.

Activities will be permitted under the lease so long as BLM determines they will not impair wilderness suitability. This will be the case either until the BLM wilderness inventory process has resulted in a final wilderness inventory decision that an area lacks wilderness characteristics, or in the case of a wilderness study area until Congress has decided not to designate the lands included within this lease as wilderness. Activities will be considered nonimpairing if the BLM determines that they meet each of the following three criteria:

(a) It is temporary. This means that the use or activity may continue until the time when it must be terminated in order to meet the reclamation requirement of paragraphs (b) and (c) below. A temporary use that creates no new surface disturbance may continue unless Congress designates the area as wilderness, so long as it can easily and immediately be terminated at that time, if necessary to management of the area as wilderness.

(b) Any temporary impacts caused by the activity must, at a minimum, be capable of being reclaimed to a condition of being substantially unnoticeable in the wilderness study area (or inventory unit) as a whole by the time the Secretary of the Interior is scheduled to send his recommendations on that area to the President, and the operator will be required to reclaim the impacts to that standard by that date. If the wilderness study is postponed, the reclamation deadline will be extended accordingly. If the wilderness study is accelerated, the reclamation deadline will not be changed. A full schedule of wilderness studies will be developed by the Department upon completion of the intensive wilderness inventory. In the meantime, in areas not yet scheduled for wilderness study, reclamation will be scheduled for completion within 4 years after approval of the activity. (Obviously, if and when the Interim Management Policy ceases to apply to an inventory unit dropped from wilderness review following a final wilderness inventory decision of the BLM State Director, the reclamation deadline previously specified will cease to apply.) The Secretary's schedule for transmitting his recommendations to the President will not be changed as a result of any unexpected inability to complete the reclamation by the specified date, and such inability will not constrain the Secretary's recommendation with respect to the area's suitability or nonsuitability for preservation as a wilderness.

The reclamation will, to the extent practicable, be done while the activity is in progress. Reclamation will include the complete recontouring of all cuts and fills to blend with the natural topography, the replacement of topsoil, and the restoration of plant cover at least to the point where natural succession is occurring. Plant cover will be restored by means of reseeding or replanting, using species previously occurring in the area. If necessary, irrigation will be required. The reclamation schedule will be based on conservative assumptions with regard to growing conditions, so as to ensure that the reclamation will be complete, and the impacts will be substantially unnoticeable in the area as a whole, by the time the Secretary is scheduled to send his recommendations to the President. ("Substantially unnoticeable" is defined in Appendix F of the Interim Management Policy and Guidelines for Lands under Wilderness Review.)

(c) When the activity is terminated, and after any needed reclamation is complete, the area's wilderness values must not have been degraded so far, compared with the area's values for other purposes, as to significantly constrain the Secretary's recommendation with respect to the area's suitability or nonsuitability for preservation as wilderness. The wilderness values to be considered are those mentioned in Section 2(c) of the Wilderness Act, including naturalness, outstanding opportunities for solitude or for primitive and unconfined recreation, and ecological, geological or other features of scientific, educational, scenic, or historical value. If all or any part of the area included within the leasehold estate is formally designated by Congress as wilderness, exploration and development operations taking place or to take place on that part of the lease will remain subject to the requirements of this stipulation, except as modified by the Act of Congress designating the land as wilderness. If Congress does not specify in such act how existing leases like this one will be managed, then the provisions of the Wilderness Act of 1964 will apply, as implemented by rules and regulations promulgated by the Department of the Interior.

Effective thirty days after publication in the Federal Register of the Colorado State Director's Final Decision that all or any portion of the public land surface in this lease is not within a Wilderness Study Area; or effective immediately upon refusal by the Congress of the United States to formally designate all or any portion of the public land surface in this lease as a wilderness area, whichever occurs first, all or any portion of the lease lands affected thereby will be automatically relieved of the provision of this wilderness protection stipulation without any action or further notice by the Bureau of Land Management. Provided however that if the State Director issues an amendment to his Final Decision, and said amendment affects all or any portion of the public land surface included in this lease by identifying said land as a new wilderness study area for intensive inventory; then effective thirty days after publication in the Federal Register, as to said identified public land surface included in this leasehold, the provisions of this wilderness protection stipulation shall automatically become reinstated without any action or further notice by the Bureau of Land Management and shall remain effective until the occurrence of one of the events described above.

Enclosure

Signature

CSO 3000-1 (July 1980)

Form 3120–2
(October 1965)
(Formerly 4–1383)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

LEASE STIPULATION
WILDLIFE LANDS

INSTRUCTIONS

This form of stipulations is to be included in Oil and Gas Leases entered into pursuant to 43 CFR 192.9 relating to Oil and Gas Leases in Wildlife Refuge, Game Range, and Coordination Lands.

1. The following stipulations will be made a part of the Bureau of Land Management Lease Forms 3120–3 and 3200–2, and all substitutions therefor. These stipulations will be made applicable as terms and conditions of performance by lessees under all oil and gas leases entered into under authority vested in the Secretary of the Interior over game range, coordination or Alaska Wildlife lands pursuant to the order of the Secretary of the Interior published in 23 *Federal Register* 227, January 11, 1958, 43 CFR 192.9.

2. Should compliance with one or more of these terms and conditions be considered unduly burdensome and unnecessary to the protection of wildlife resources, lessee may request waiver thereof by letter addressed the Secretary of the Interior setting forth, in full, the reasons why a waiver is considered necessary. The authority to grant such waivers shall be discretionary and may be exercised only by the Secretary or the Under Secretary of the Interior.

3. The authorized officer shall (a) approve no plan of operation that contains provisions inconsistent with the stipulations hereinafter set forth; (b) waive no term or condition in a lease; or exercise no discretion vested in him unless he is satisfied the exercise of that discretion will not damage any wildlife resource.

4. Drilling and production operations under the lease shall be under the direction of the Geological Survey.

5. As used herein:

(a) the term "lessee" includes the lessee, heirs and assigns of the lessee and persons operating on behalf of the lessee;

(b) the term "wildlife resources" include fish and wildlife resources and concentrations, fish and wildlife management operations and range improvements and facilities;

(c) the term "authorized officer" means the State Director of the Bureau of Land Management in the State in which the land is located, and, in Alaska, the Refuge Manager of the Bureau of Sport Fisheries and Wildlife.

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1. The lessee shall:

(a) comply with all the rules and regulations of the Secretary of the Interior;

(b) prior to the beginning of operations, appoint and maintain at all times during the term of the lease a local agent upon whom may be served written orders or notices respecting matters contained in these stipulations and to inform the authorized officer in writing of the name and address of such agent. If a substitute agent is appointed, the lessee shall immediately inform the said representative;

(c) conduct all authorized activities in a manner satisfactory to the authorized officer with due regard for good land management and avoid damage to improvements, timber, crops, and wildlife cover; fill all sump holes, pits, and other excavations or cover all debris; and, as far as reasonably possible, restore the surface of the leased lands to their former condition; and, when required, to bury all pipelines below plow depth. The authorized officer shall have the right to enter all the premises at any time to inspect both the installation and operational activities of the lessee;

(d) take such steps as may be necessary to prevent damage to wildlife;

(e) do all in his power to prevent and suppress forest, brush, or grass fires, and to require his employees, contractors, subcontractors and employees of contractors or subcontractors to do likewise;

(f) install adequate blow-out prevention equipment;

(g) construct ring dikes and sump pits to confine drilling mud and other pollutants and make safe disposition of salt water by use of injection wells or such other method as may be approved in the plan of operation;

(h) cover flare pits in areas of wildlife concentration;

(i) remove derricks, dikes, equipment, and structures not required in producing operations within 60 days after the completion of drilling;

(j) comply with and see to it that his agents and employees comply with all Federal and State laws relating to hunting, fishing, and trapping;

(k) commit the lease to any unit plan required in the interest of conservation of oil or gas resources or for the protection of wildlife;

(l) prior to the conduct of geological, geophysical, or core drilling operations or construction of any facilities, or prior to operations to drill or produce, submit in *triplicate* for approval, in writing, by the authorized officer a plan of operation that will include detailed statements indicating the manner in which the lessee will comply with these stipulations together with a statement that the lessee agrees that compliance with these stipulations and with the approved plan of operations are conditions of performance under this lease and that failure to comply with these provisions *(unless they are waived by the Secretary or the Under Secretary of the Interior)* will be grounds for cancellation of the lease by the United States. Notwithstanding other provisions in these stipulations, the lessee shall include in any plan of operation specific provisions relating to: the time, place, depth and strength of seismographic shots, maps showing the location of his leases included in the plan, actual and proposed access roads, bunkhouses, proposed well locations, storage and utility facilities, water storage, pipelines and pumping stations; the type of safety equipment that will be employed; the methods to be used to assure the disposition of drilling mud, pollutants, and other debris; the location of facilities in relation to flood levels; and such other specific matters as the authorized officer may require. The plan of operation shall be kept current in all respects and all revisions and amendments submitted to the authorized officer for written approval;

(m) do all things reasonably necessary to prevent or reduce to the fullest extent scarring and erosion of the land, pollution of the water resources and any damage to the watershed. Where construction, operation, or maintenance of any of the facilities on or connected with this lease causes damage to the watershed or pollution of the water resource, the lessee agrees to repair such damage, including reseeding and to take such corrective measures to prevent further pollution or damage to the watershed as are deemed necessary by the authorized officer;

(n) file the bond required by Sec. 2a(4) of the lease before conducting any operations on the leasehold, and file any additional bond required by the authorized officer to pay for damages to wildlife habitat, including trees and shrubs, or wildlife improvements;

(o) agree to respect and comply with any new requirements imposed by the Secretary of the Interior, or the authorized officer, on the operating program as operating experiences proves necessary in order to give complete protection to wildlife populations and wildlife habitat on the areas leased.

2. The lessee shall not:

(a) construct roads, pipelines, utility lines, and attendant facilities that are either unnecessary or which might interefere with wildlife habitat or resources or with drainage;

(b) modify or change the character of streams, lakes, ponds, water holes, seeps, and marshes, except by advance approval in writing by the authorized officer nor shall he in any way pollute such streams, lakes, ponds, water holes, seeps, or marshes;

(c) conduct operations at such times as will interfere with wildlife concentrations;

(d) conduct geological or geophysical explorations that might damage any wildlife resource and such operations shall be conducted only in accordance with advance approval, in writing, by the authorized officer as to the time, manner of travel, and disturbances of surfaces and the facilities required for the protection of wildlife;

(e) use explosives in fish spawning or rearing areas, nesting areas, lambing grounds, or other areas of wildlife concentrations during periods of intense activity or at any other time or in any manner that might damage any wildlife resources; the pattern, size, and depth of seismographic shots shall be submitted to the authorized officer for advance approval in writing and immediately following the detonation of any seismographic charge, the hole shall be filled or plugged and any surface damage repaired to the satisfaction of the authorized officer;

(f) without advance approval, in writing, use any water or water source controlled or developed by the United States;

(g) use mobile equipment under such conditions as to permanently damage surface resources, cause scarring and erosion, or interfere with wildlife concentrations;

(h) conduct geological, or geophysical, or core drilling operations or construct roads, bunkhouses or any facilities or drill or produce under a lease until the submittal and approval in writing of a plan of operation pursuant to 1(l) above, or deviate therefrom until any revisions or amendments of said plan have been approved in writing by the authorized officer;

(i) burn rubbish, trash, or other inflammable materials or use explosives in a manner or at a time that would constitute a fire hazard.

GPO 853-423

Table 4-A-1. Summary of Oil and Gas Leasing Stipulations 1/

Kinds of stipulations	Current Management	Resource Conservation	Resource Utilization	Preferred Alternative
Standard stipulations	840,789 2/	839,879	913,850	878,225
(for all oil & gas leases)	943,390 3/			
Special stipulations 4/				
Wildlife				
Deer & elk winter range	238,530	248,890	248,890	248,890
Elk calving grounds	9,700	9,700	9,700	9,700
Grouse strutting area	2,920	2,920	2,920	2,920
Peregrine falcon area (Paradox Valley)	2,160	2,160	2,160	2,160
Winter eagle concentration areas	49,420	53,020	53,020	53,020
No-surface occupancy stipulations				
Wildlife				
McElmo Research Natural Area	400	0	0	400
Peregrine falcon area (Mesa Verde)	200	200	200	200
(Perins Peak)	920	920	920	920
Cultural				
Bull Canyon Rockshelter	--	5	5	5
Cahone Canyon	--	--	--	5,346
Cannonball Mesa	80	80	80	80
Cross Canyon	--	--	--	4,669
Dolores Cave	--	60	60	60
Dominguez-Escalante Ruins	40	40	40	40
Indian Henry's Cabin	--	160	160	160
Lowry Ruin	80	80	80	80
McLean Basin Towers	80	80	80	80
Other sites	800	800	800	800
Painted Hand Petroglyphs	120	120	120	120
Painted Hand Ruin	--	80	80	80
Sand & East Rock canyons	1,640	1,640	1,640	1,640
Squaw/Papoose Canyon	--	--	--	2,749
Tabeguache Canyon	--	--	--	3,100
Tabeguache Pueblo	--	120	120	120

Table 4-A-1. (Continued)

Kinds of stipulations	Current Management	Resource Conservation	Resource Utilization	Preferred Alternative
Recreational				
Dolores River Canyon	34,680	21,600	50,230	21,600
No Leasing				
Wildlife				
Peregrine falcon area (Perins Peak & Animas Mountain)	1,480	1,480	1,480	1,480
Recreational				
Menefee Mountain	--	--	--	5,000
Weber Mountain	--	--	--	4,840
Cultural				
Cahone Canyon	--	--	--	3,694
Cross Canyon	--	--	--	7,065
Other sites	120	120	120	120
Sand & East Rock canyons	4,240	4,240	4,240	4,240
Squaw/Papoose Canyon	--	--	--	1,862
Wilderness	--	102,601	--	28,630

1/ By area and by alternative.
2/ With Wilderness Interim Management.
3/ Without Wilderness Interim Management.
4/ Special stipulations limit operations on wildlife habitat areas critical to species during certain seasons of the year.
Source: BLM Data 1984.

APPENDIX FOUR-B.

COAL STIPULATIONS.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

COAL LEASE

Serial Number

This lease, is entered into on by the United States of America, the lessor through the Bureau of Land Management, and

, the lessee,

and shall become effective on

(effective date).

Sec. 1. STATUTES AND REGULATIONS — This lease is issued pursuant and subject to the terms and provisions of the Mineral Leasing Act of February 25, 1920, 41 Stat. 437, as amended, 30 U.S.C. Sections 181-287 and 90 Stat. 1083-1092, hereafter referred to as the Act, and of the Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. Section 1201 et seq., and the Mineral Leasing Act for Acquired Lands of August 7, 1947, as amended, 30 U.S.C. 351-359 et seq. This lease is subject to all regulations of the Secretary of the Interior (including but not limited to 30 CFR Part 211 and Chapter VII and 43 CFR Group 3400) which are now in force or (except as expressly limited herein) hereafter in force, and all such regulations are made a part hereof.

WITNESSETH:

Sec. 2. RIGHTS OF LESSEE — The lessor, in consideration of any bonus paid (or to be paid if deferred), rents and royalties and other conditions hereinafter set forth, hereby grants and leases to the lessee the exclusive right and privilege to mine and dispose of

containing acres, more or less and, subject to the conditions, limitations and prohibitions provided in this lease and in applicable acts and regulations, the right to construct all works, buildings, structures, equipment, and appliances which may be necessary and convenient for the mining and preparation of the coal for market, and, subject to the conditions herein provided, to use so much of the surface as may reasonably be required in the exercise of the rights and privileges herein granted for a period of 20 years and so long thereafter as the condition of continued operation is met.

Sec. 3. DILIGENT DEVELOPMENT AND CONTINUED OPERATION — The lessee shall engage in the diligent development of the coal resources subject to the lease. After diligent development is achieved, the lessee shall maintain continued operation of the mine or mines on the leased lands. The terms diligent development and continued operation are defined in the applicable regulations in Titles 30 and 43 of the Code of Federal Regulations.

Sec. 4. BONDS — The lessee shall file with the appropriate Bureau of Land Management office a lease bond in the amount of for the use and benefit of the United States, to insure payment of deferred bonus payments, rentals and royalties and to insure compliance with all other terms of this lease, the regulations and the Act (except for reclamation within the area covered by a surface mining permit issued under the permanent regulatory program by the regulatory authority) and, if appropriate, for the protection of the interests of the surface owners on the leased lands. An increase in the amount of the lease bond may be required by the lessor at any time during the life of the lease to reflect changed conditions.

Sec. 5. RENTAL — An annual rental of for each acre or fraction thereof shall be paid in advance on or before each anniversary date of this lease. This section shall not be subject to revision except in the course of lease readjustment.

Sec. 6. PRODUCTION ROYALTY — The lessee shall pay a production royalty of percent of the value of coal produced by strip or auger methods and percent of the value of coal produced by underground mining methods. The value of coal shall be determined as set forth in 30 CFR 211. Production royalties paid for a calendar month shall be reduced by the amount of any advance royalties paid under this lease to the extent that such advance royalties have not been used to reduce production royalties in a previous month. However, production royalties payable after the 20th year of the lease shall not be reduced by advance royalties paid during the first 20 years of the lease. Production royalties shall be payable the final day of the month succeeding the calendar month in which the coal is sold, unless otherwise specified in 30 CFR 211. The royalty rates provided in this section shall not be subject to revision except in the course of lease readjustment.

Sec. 7. ADVANCE ROYALTY — Upon request by the lessee the District Mining Supervisor may accept, for a total of not more than 10 years, the payment of advance royalties in lieu of continued operation consistent with the regulations in 43 CFR 3473 and 30 CFR 211. The advance royalty shall be based on a percent of the value of a minimum number of tons which shall be determined in the manner established by the regulations in 30 CFR 211.

Sec. 8. METHOD OF PAYMENTS — The lessee shall make rental payments to the appropriate Bureau of Land Management office until production royalties become payable. Thereafter, all rentals, production royalties and advance royalties shall be paid to the appropriate office of the United States Minerals Management Service.

Sec. 9. EXPLORATION PLAN — The lessee shall not commence any exploration, except casual use, on the leased lands without an approved exploration plan. Exploration plans for leased lands covered by an approved mining permit shall be submitted to the Regional Director of the Office of Surface Mining in accordance with the regulations in 30 CFR Chapter VII. Exploration plans for leased lands not covered by an approved mining permit shall be submitted to the District Mining Supervisor in accordance with the regulations in 30 CFR 211.

Sec. 10. MINING PLAN — In accordance with the regulations in 30 CFR 211 and Chapter VII, the lessee shall submit a mining and reclamation plan not more than three years after the effective date of this lease. Mining operations shall not commence until after the mining and reclamation plan is approved. The mining and reclamation shall be conducted in accordance with the approved mining and reclamation plan. Exploration activities which were not included in the approved mining and reclamation plan require submittal of exploration plans in accordance with Section 9 of this lease.

Sec. 11. LOGICAL MINING UNIT (LMU) — This lease is not automatically an LMU. At the request of the lessee or at the direction of the District Mining Supervisor, this lease shall become an LMU, subject to the provisions set forth in 30 CFR 211. If the LMU of which this lease is a part is dissolved, the lease will not automatically be terminated unless requested in writing by the lessee to the appropriate office of the Bureau of Land Management or directed in writing by the District Mining Supervisor.

Sec. 12. OPERATIONS ON LEASED LANDS — (a) In accordance with conditions of this lease, the exploration and mining and reclamation plans, the permit issued pursuant to 30 CFR Chapter VII, and all applicable acts and regulations, the lessee shall exercise reasonable diligence, skill, and care in all operations on leased lands. (b) The lessee shall minimize to the maximum extent possible wasting of the coal deposits and other mineral and nonmineral resources, including, but not limited to, surface resources which may be found in, upon, or under such lands.

Sec. 13. SPECIAL STATUTES — The lessee shall comply with the provisions of the Federal Water Pollution Control Act (33 U.S.C. 1151-1175) and the Clean Air Act (42 U.S.C. 7401 et seq.).

Sec. 14. AUTHORIZATION OF OTHER USES AND DISPOSITION OF LEASED LANDS — (a) The lessor reserves the right to authorize other uses of the leased lands by regulation or by issuing, in addition to this lease, leases, licenses, permits, easements, or rights-of-way, including leases for the development of minerals other than coal under the Act. The lessor may authorize any other uses of the leased lands that do not unreasonably interfere with the exploration and mining operations of the lessee, and the lessee shall make all reasonable efforts to avoid interference with such authorized uses.

(b) The lessor reserves the right: (i) to sell or otherwise dispose of the surface of the leased lands under existing law or laws hereafter enacted insofar as said surface is not necessary to the use of the lessee in the extraction and removal of the coal therein, or (ii) to dispose of any resource in such lands if such disposal will not unreasonably interfere with the exploration and mining operations of the lessee.

(c) If the leased lands have been or shall hereafter be disposed of under laws reserving to the United States the deposits of coal therein, the lessee shall comply with all conditions as are or may hereafter be provided by the laws and regulations reserving such coal.

Sec. 15. EQUAL OPPORTUNITY CLAUSE — The lessee will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended, and the rules, regulations and relevant orders of the Secretary of Labor.

Sec. 16. CERTIFICATION OF NONSEGREGATED FACILITIES — By entering into this lease, the lessee certifies that he does not and will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not and will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The lessee agrees that a breach of this certification is a violation of the Equal Opportunity clause of this lease. As used in this certification, the term "segregated facilities" means, but is not limited to, any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. Lessee further agrees that (except where lessee has obtained identical certifications from proposed contractors and subcontractors for specific time periods) lessee will obtain identical certifications from proposed contractors and subcontractors prior to award of contracts or subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause; that lessee will retain such certifications in lessee's files; and that lessee will forward the following notice to such proposed contractors and subcontractors (except where proposed contractor or subcontractor has submitted identical certifications for specific time periods). Notice to prospective contractors and subcontractors of requirement for certification of nonsegregated facilities. A *Certification of Nonsegregated Facilities*, as required by the May 9, 1967, order (32 F.R. 7439, May 19, 1967) on *Elimination of Segregated Facilities*, by the Secretary of Labor, must be submitted prior to the award of a contract exceeding $10,000 which is not exempt from the provisions of the Equal Opportunity clause. Certification may be submitted either for each contract and subcontract or for all contracts and subcontracts during a period (i.e., quarterly, semiannually, or annually).

Sec. 17. EMPLOYMENT PRACTICES — The lessee shall pay all wages due persons employed on the leased lands at least twice each month in lawful money of the United States. The lessee shall grant all miners and other employees complete freedom to purchase goods and service of their own choice. The lessee shall restrict the workday to not more than 8 hours in any one day for underground workers, except in case of emergency. The lessee shall employ no person under the age of 16 years in any mine below the surface. If the laws of the State in which the lands are situated conflict with this paragraph, then the State laws apply.

Sec. 18. MONOPOLY AND FAIR PRACTICES — The lessor reserves full authority to promulgate and enforce orders and regulations under the provisions of Sections 30 and 32 of the Act (30 U.S.C. Sections 187 and 189) necessary to insure that any sale of the production from the leased lands to the United States or to the public is at reasonable prices, to prevent monopoly, and to safeguard the public welfare, and such orders and regulations shall upon promulgation be binding upon the lessee.

Sec. 19. TRANSFERS —

- ☐ This lease may be transferred in whole or in part to any person, association or corporation qualified under 43 CFR 3472.1-1 to hold a lease.
- ☐ This lease may only be transferred in whole or in part to another public body, or to a person who will mine the coal on behalf of and for the use of the public body, or to a person for the limited purpose of creating a security interest in favor of a lender who agrees to be obligated to mine the coal on behalf of the public body. The transferee must be qualified under 43 CFR 3472.
- ☐ This lease may only be transferred in whole or in part to other small businesses qualifying under 13 CFR 121 and 43 CFR 3472.2-2(c).

Any transfer of this lease in whole or in part is subject to the procedures and requirements for approval in the relevant regulations in 43 CFR 3400. A transfer will become effective on the first day of the month following its approval by the authorized officer, or, if the transferee requests, the first day of the month of the approval.

Sec. 20. RELINQUISHMENT OF LEASE — The lessee may file a relinquishment of the entire lease, a legal subdivision or aliquot part thereof, but not less than 10 acres, or any bed of the coal deposits therein. The relinquishment shall be filed in triplicate with the authorized officer. Upon the determination by the authorized officer that the public interest shall not be impaired, that all accrued rentals and royalties have been paid and that all of the obligations of the lessee under the regulations and the lease terms have been met, the relinquishment shall be accepted effective the date filed.

Sec. 21. NONCOMPLIANCE — Any failure to comply with the conditions of this lease, the approved exploration and mining and reclamation plans, the regulations, or applicable acts shall be dealt with in accordance with the procedures set forth in the regulations.

Sec. 22. WAIVER OF CONDITIONS — The lessor reserves the right to waive any breach of the conditions contained in this lease, except the breach of such conditions as are required by the Act, but any such waiver shall extend only to the particular breach so waived and shall not limit the rights of the lessor with respect to any future breach; nor shall the waiver of a particular breach prevent cancellation of this lease for any other cause, or for the same cause occurring at another time.

Sec. 23. READJUSTMENT OF TERMS AND CONDITIONS — (a) The lease is subject to readjustment on the 20th year after the effective date and on each 10th year thereafter. In order that the lease may be readjusted as close as possible to the dates when it becomes subject to readjustment, the lessor may propose the terms of readjustment of any conditions of this lease, including rental and royalty rates, before the 20th year after the effective date and before each 10-year interval thereafter. The authorized officer shall notify the lessee whether he intends to readjust the terms and conditions of the lease and, if he intends to readjust, the nature of the readjustments in accordance with the regulations in 43 CFR 3451. Unless the lessee, within 60 days after receipt of the proposed readjusted terms, files with the lessor an objection to the proposed readjusted conditions or relinquishes the lease as of the effective date of the readjustment, the lessee shall be deemed conclusively to have agreed to such conditions.

(b) If the lessee files objections to the proposed readjusted conditions, the existing conditions shall remain in effect until there has been an agreement between the lessor and the lessee on the new conditions to be incorporated in the lease, or until the lessee has exhausted his rights of appeal under Section 29 of this lease, or until the lease is relinquished, except that the authorized officer may provide in the notice of readjusted lease terms that the readjustment or any part thereof is effective pending the outcome of the appeal. If the readjusted royalty provisions are subsequently rescinded or amended, the lessee shall be permitted to credit any excess royalty payments against royalties subsequently due to the lessor.

Sec. 24. DELIVERY OF PREMISES — Upon termination of this lease for any reason, or relinquishment of a part of this lease, the lessee shall deliver to the lessor in good order and condition all or the appropriate part of the leased lands. Delivery of the leased lands shall include underground timbering and such other supports and structures as are necessary for the preservation of the mine or deposit, and shall be in accordance with all other applicable provisions of the regulations including 30 CFR 211 and Chapter VII, for the completion of operations and abandonment.

Sec. 25. PROPRIETARY INFORMATION — Geological and geophysical data and information, including maps, trade secrets, and commercial and financial information which the lessor obtains from the lessee shall be treated in accordance with 43 CFR Part 2, 30 CFR 211.6 and other applicable regulations. Total lease reserve figures developed from this information will not be confidential.

Sec. 26. LESSEE'S LIABILITY TO LESSOR — (a) The lessee shall be liable to the United States for any damage suffered by the United States in any way arising from or connected with the lessee's activities and operations under this lease, except where damage is caused by employees of the United States acting within the scope of their authority.

(b) The lessee shall indemnify and hold harmless the United States from any and all claims arising from or connected with the lessee's activities and operations under this lease.

(c) In any case where liability without fault is imposed on the lessee pursuant to this section, and the damages involved were caused by the action of a third party, the rules of subrogation shall apply in accordance with the law of the jurisdiction where the damages occurred.

Sec. 27. INSPECTIONS AND INVESTIGATIONS — (a) All books and records maintained by the lessee showing information required by this lease or regulations must be kept current and in such manner that the books and records can be readily checked at the mine, upon request, by the Regional Director or District Mining Supervisor or their representative.

(b) The lessee shall permit any duly authorized officer or representative of the lessor at any reasonable time (1) to inspect or investigate the leased lands, the exploration and mining and reclamation operations, and all surface and underground improvements, works, machinery, and equipment, and all books and records pertaining to the lessee's obligations to the lessor under this lease and regulations and (2) to copy, and make extracts from any such books and records.

Sec. 28. UNLAWFUL INTEREST — No member of, or Delegate to, Congress, or Resident Commissioner, after his election or appointment, either before or after he has qualified and during his continuance in office, and no officer, or employee of the Department of the Interior, except as provided in 43 CFR 7.4(a)(3), shall hold any share or part in this lease or derive any benefit therefrom. The provisions of Section 3741 of the Revised Statutes, as amended, 41 U.S.C. Section 22, and the Act of June 25, 1948, 62 Stat. 702, as amended, 18 U.S.C. Sections 431-433, relating to contracts, enter into and form a part of this lease insofar as they may be applicable.

Sec. 29. APPEALS — The lessee shall have the right of appeal (a) under 43 CFR 3000.4 from an action or decision of any official of the Bureau of Land Management, (b) under 30 CFR Part 290 from an action, order, or decision of any official of the Minerals Management Service, or (c) under applicable regulation from any action or decision of any other official of the Department of the Interior arising in connection with this lease, including any action or decision pursuant to Section 23 of this lease with respect to the readjustment of conditions.

Sec. 30. DEFERRED BONUS — This lease is issued subject to the payment of by the lessee as a deferred bonus. Payment of the deferred bonus by the lessee shall be made on a schedule specified in Section 31 (Special Stipulations) of this lease.

Sec. 31. SPECIAL STIPULATIONS — (a) Cultural Resources - (1) Before undertaking any activities that may disturb the surface of the leased lands, the lessee shall conduct a cultural resource intensive field inventory in a manner specified by the authorized officer of the BLM or of the surface managing agency (if different) on portions of the mine plan area and adjacent areas, or exploration plan area, that may be adversely affected by lease-related activities and which were not previously inventoried at such a level of intensity. The inventory shall be conducted by a qualified professional cultural resource specialist (i.e., archeologist, historian or historical architect, as appropriate), approved by the authorized officer of the surface managing agency (BLM if the surface is privately owned), and a report of the inventory and recommendations for protecting any cultural resources identified shall be submitted to the Regional Director of the Office of Surface Mining (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area) and the authorized officer of the BLM or the surface managing agency (if different). The lessee shall undertake measures, in accordance with instructions from the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area), to protect cultural resources on the leased land. The lessee shall not commence the surface disturbing activities until permission to proceed is given by the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area).

(2) The lessee shall protect all cultural resource properties within the lease area from lease-related activities until the cultural resource mitigation measures can be implemented as part of an approved mining and reclamation plan or exploration plan.

(3) The cost of conducting the inventory, preparing reports, and carrying out mitigation measures shall be borne by the lessee.

(4) If cultural resources are discovered during operations under this lease, the lessee shall immediately bring them to the attention of the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area), or the authorized officer of the surface managing agency if the Regional Director, or District Mining Supervisor, as appropriate, is not available. The lessee shall not disturb such resources except as may be subsequently authorized by the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area). Within two (2) working days of notification, the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area) will evaluate or have evaluated any cultural resources discovered and will determine if any action may be required to protect or preserve such discoveries. The cost of data recovery for cultural resources discovered during lease operations shall be borne by the surface managing agency unless otherwise specified by the authorized officer of the BLM or of the surface managing agency (if different).

(5) All cultural resources shall remain under the jurisdiction of the United States until ownership is determined under applicable law.

(b) Paleontological Resources - (1) Before undertaking any activities that may disturb the surface of the leased lands, the lessee shall contact the Bureau of Land Management to determine whether the authorized officer will require the lessee to conduct a paleontological appraisal of the mine plan and adjacent areas, or exploration plan areas, that may be adversely affected by lease-related activities. If the authorized officer determines that one is necessary, the paleontological appraisal shall be conducted by a qualified paleontologist approved by the authorized officer of the surface managing agency (BLM if the surface is privately owned), using the published literature and, where appropriate, field appraisals for determining the possible existence of larger and more conspicuous fossils of scientific significance. A report of the appraisal and recommendations for protecting any larger and more conspicuous fossils of significant scientific interest on the leased lands so identified shall be submitted to the authorized officer of the surface managing agency (BLM if the surface is privately owned). When necessary to protect and collect the larger and more conspicuous fossils of significant scientific interest on the leased lands, the lessee shall undertake the measures provided in the approval of the mining and reclamation plan or exploration plan.

(2) The lessee shall not knowingly disturb, alter, destroy or take any larger and more conspicuous fossils of significant scientific interest, and shall protect all such fossils in conformance with the measures included in the approval of the mining and reclamation plan or exploration plan.

(3) The lessee shall immediately bring any such fossils that might be altered or destroyed by his operation to the attention of the Regional Director or the District Mining Supervisor, as appropriate. Operations may continue as long as the fossil specimen or specimens would not be seriously damaged or destroyed by the activity. The Regional Director or the District Mining Supervisor, as appropriate, shall evaluate or have evaluated such discoveries brought to his attention and, within five (5) working days, shall notify the lessee what action shall be taken with respect to such discoveries.

(4) All such fossils of significant scientific interest shall remain under the jurisdiction of the United States until ownership is determined under applicable law. Copies of all paleontological resource data generated as a result of the lease term requirements will be provided to the Regional Director or the District Mining Supervisor, as appropriate.

(5) The cost of any required salvage of such fossils shall be borne by the United States.

(6) These conditions apply to all such fossils of significant scientific interest discovered within the lease area whether discovered in the overburden, interburden, or coal seam or seams.

c) Deferred Bonus Payment Schedule:

APPENDIX FIVE

SAN JUAN/SAN MIGUEL RESOURCE MANAGEMENT PLAN
EMPHASIS AREAS/MANAGEMENT GUIDANCE

Introduction

The San Juan/San Miguel Resource Management Plan (RMP) defines the long-term direction for managing the public lands and minerals within the planning area. The RMP also defines the overall direction and required activities to achieve the desired resource conditions and is composed of two principle parts: (a) multiple use emphasis areas that describe the various management practices and guidelines to be used in administering the public lands and minerals, and (b) a resource management map that shows the various emhasis areas and boundaries for future management. Table 5-1 was developed in response to public issues and management concerns and how available, suitable, and capable the land and its resources are.

Implementing this land use plan is the key to translating the goals, management practices, and guidelines stated in the plan into on-the-ground results. It will be put into effect through budgeting and annual work plan processes, which supplement the land use plan by making the adjustments needed to reflect current priorities within the overall plan direction.

Through the annual work plan process, money will be placed in priority order to accomplish tasks needed to implement the land use plan's goals, practices, and guidelines. The implementation will generally require more detailed activity planning prior to actual on-the-ground actions. Many of the activity planning actions will be subject to detailed environmental assessments (EAs; not written for projects adequately covered in the RMP/EIS) and resultant decisions; the plan will also be used as direction for these future actions.

Table 5-1 was written the fall of 1983 before the BLM and USFS land exchange bill was passed (PL 98-141, October 31, 1983). Thus, some of the land now under the Forest Service's jurisdiction is discussed under BLM's land use planning process (see Appendix 1 for details of the land exchange).

Implementation

Table 5-1 consists of direction concerning activities needed to implement the goals and objectives of the particular emphasis area. Specific limits and constraints may be defined within emphasis areas to ensure objectives are achieved.

Land use planning is not a process whereby every possible future use of the public land can be forecast and taken into account in an RMP. However, the emphasis areas can be used to determine compatibility with possible future uses of the public land and minerals. For example, as possible future uses arise, they will be compared to the management emphasis on a given area and relative compatibility will be determined; if the uses are compatible, they would be allowed.

Uses that were found to be incompatible could require any of the following actions: (1) land use plan amendments, (2) mitigation to bring the uses within the goals and objectives of the emphasis area, and (3) relocation to another area where the proposed uses would be compatible with the given emphasis for the area.

This land use plan will be used as direction for decisions made in the immediate future in the planning area. When necessary, revisions will be completed based upon monitoring and evaluation, new data, new or revised policy, and changes in circumstances affecting the entire or major portions of the plan. Revisions will comply with all of the requirements of these regulations for preparing and approving the original RMP.

Table 5-1. Management Guidance for Emphasis Areas.

Management Guidance for Area A: Emphasis on Livestock Management

Management direction will emphasize increasing forage and livestock production on a sustained yield basis. Emphasis is upon increasing forage, red meat and animal fiber production and improving forage composition and watershed conditions. Significant investments may be made in livestock improvements which will be multiple use oriented (i.e., wildlife, watershed, etc.). Investments for other resources will be minimal, although resource management activities compatible with livestock production will continue. Dispersed recreation opportunities will continue. Woodland products and timber will be made available. Wildlife habitat development generally will not be emphasized. Fire will be utilized to enhance forage production.

Management Direction for Other Resource Values

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Cultural	Protect & manage important cultural resource properties.				
Recreation	Manage for dispersed recreation as the primary recreation activity. Permit yearlong, non-motorized recreation activities throughout the area. Allow motorized, off-road vehicle (ORV) use. Establish site-specific visual quality objectives & design guidelines for landscape development projects during activity planning.				
Wildlife	Maintain or improve wildlife habitat through interdisciplinary design of range improvement projects & diversity of native vegetation types. Allow compatible wildlife introductions or reintroductions or habitat improvements. Limit investments of wildlife program funds unless opportunity for substantial benefits to wildlife resources can be realized. Aquatic/riparian resources will receive special consideration at the activity planning stage to insure maintenance or improvement of these resources.		All perennial streams within the planning area that have the potential of providing quality fisheries & (or) riparian habitat (approx. 400 mi have been identified) should receive special management consideration through the activity planning process & monitoring systems to maintain, improve, or enhance resource conditions associated with aquatic/riparian habitat. Allow Colorado Division of Wildlife (CDOW) to introduce chukar & expand the pronghorn antelope herds. In all vegetation types, 20% of the existing vegetation should be maintained interspersed throughout the project areas to maintain dispersed, ecologic communities for wildlife.	All perennial streams within the planning area that have the potential of providing quality fisheries & (or) riparian habitat (approx. 400 mi have been identified) should receive special management consideration through the activity planning process & monitoring systems to maintain, improve, or enhance resource conditions associated with aquatic/riparian habitat. Allow CDOW to introduce chukar & expand the pronghorn antelope herds. In all vegetation types, 4% of the existing vegetation should be maintained interspersed throughout the	All perennial streams within the planning area that have the potential of providing quality fisheries & (or) riparian habitat (approx. 400 mi have been identified) should receive special management consideration through the activity planning process & monitoring systems to maintain, improve, or enhance resource conditions associated with aquatic/riparian habitat. Allow CDOW to introduce chukar & expand the pronghorn antelope herds. Other game species would be allowed if site-specific analysis indicates that significant conflicts with

Area A (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Wildlife (continued)				project areas to maintain dispersed, ecologic communities for wildlife.	livestock will not occur. In all vegetation types, 5% to 15% of the existing vegetation should be maintained interspersed throughout the project areas to maintain dispersed, ecologic communities for wildlife.
Livestock Management	Manage suitable vegetation types for increased, sustained livestock production. One goal is to improve range condition & productivity on native rangeland. Use improved management systems such as rest-rotation & deferred-rotation, if appropriate. Invest in range improvements necessary to implement management systems.	Continue current management on the 11 Allotment Management Plans (AMPs; 304,000 acres).	Develop 53 AMPs (694,000 acres).	Develop 109 AMPs (850,000 acres).	Develop 71 AMPs (810,000 acres).
Forestry	Manage woodland products & timber to enhance range resources & for insect & disease control. Timber species should be managed at a stocking level that maintains moderate to high herbage production. Utilize woodland products to the maximum extent practicable through commercial sales. Manage aspen forest types to perpetuate aspen, using even-aged silviculture. Limit clearcuts in aspen to a maximum of 40 acres or the size of an aspen clone, whichever is smaller.		Provide reasonable opportunity to salvage forest products prior to & following range habitat improvement treatments. Provide legal & physical access to vegetation treatments to facilitate salvage of forest products when feasible.	Provide reasonable opportunity to salvage forest products prior to & following range habitat improvement treatments. Provide legal & physical access to vegetation treatments to facilitate salvage of forest products when feasible.	Provide reasonable opportunity to salvage forest products prior to & following range habitat improvement treatments. Provide legal & physical access to vegetation treatments to facilitate salvage of forest products when feasible.
Minerals	Allow mineral development in all areas not withdrawn from entry. Provide protective stipulations to limit impacts to livestock improvements or management practices.				

Area A (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Lands	Allow for disposal of parcels of public land that do not significantly affect livestock management. Major utility corridors would be allowed with protective stipulations to prevent or limit impacts to range management. Allow other land actions when they will result in minimal adverse impacts or when they will be beneficial to grazing management. Acquire or exchange lands when livestock management opportunities will be enhanced.				
Soils and Water	Maintain soil productivity, minimize man-caused soil erosion and strive to achieve adequate vegetation cover for watershed protection and plant vigor. Maintain water quality and quantity for multiple resource management. Secure sufficient water rights to provide for livestock management needs.				
Fire	Provide level of protection from wildfire that will result in least total cost & will generally enhance range management values. Use prescribed fire when possible to enhance forage production.		Continue & expand (where appropriate) the limited fire suppression plan to enhance vegetation conditions for livestock grazing.	Continue & expand (where appropriate) the limited fire suppression plan to enhance vegetation conditions for livestock grazing.	Continue & expand (where appropriate) the limited fire suppression plan to enhance vegetation conditions for livestock grazing.
Access	Provide administrative access to public land to enhance management of the range resource. Provide maintenance of roads in the BLM transportation plan to minimum standards for user safety.				Acquire access to the following grazing allotments: 8019, 8011, 8018, 8013, & 7016.

Management Guidance for Area B: Emphasis on Wildlife

Management direction will emphasize achieving and maintaining the best possible habitat conditions for fisheries and wildlife. Emphasis will be upon increasing aquatic and terrestrial wildlife numbers within habitat capability, improving stream and watershed conditions and providing a high degree of vegetation diversity. Investments for wildlife habitat improvements could be high in certain areas. Woodland products and timber will be available. Dispersed recreation opportunities will continue. Livestock management will be of an intensity that will utilize available forage and maintain forage vigor while not degrading wildlife habitat. The number or season-of-use for livestock may be reduced in some areas.

Management Direction for Other Resource Values

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Cultural	Protect and manage important cultural resource properties.				
Recreation	Manage for dispersed recreation as the primary recreation activity. Permit year-long, non-motorized recreation activities throughout the area, except restrict recreation use to resolve people and wildlife conflicts, favoring wildlife in such cases. Establish site-specific visual quality objectives and design guidelines for landscape development projects during activity planning.	Continue vehicle closure on Perins Peak area. Continue seasonal (April 1-July 15) closure to public access at Perins Peak Peregrine Falcon Eyrie.	Continue vehicle closure on Perins Peak area. Continue seasonal (April 1-July 15) closure to public access at Perins Peak Peregrine Falcon Eyrie.	Continue vehicle closure on Perins Peak area. Continue seasonal (April 1-July 15) closure to public access at Perins Peak Peregrine Falcon Eyrie.	Continue vehicle closure on Perins Peak and Animas Mountain area. Continue seasonal (April 1-July 15) closure to public access at Perins Peak Peregrine Falcon Eyrie.
Wildlife	Intensively manage for optimal terrestrial & aquatic/riparian wildlife habitat. Maintain or improve historically occupied or potentially suitable threatened & endangered (T&E) species habitat. Maintain or improve habitat for sensitive plant & wildlife species & "migratory bird species of high Federal interest." Provide for necessary investments to enhance wildlife habitat. Cooperate with CDOW for funding of habitat improvement projects & also cooperate with CDOW on the reintroduction program.	Terrestrial Continue current management of the following big game animals: 20,000 mule deer 1,600 elk 175 antelope Continue management of Perins Peak & Paradox peregrine falcon eyries. Continue management of bald eagle nests & winter eagle concentration areas. Animas Mountain should be managed for its wildlife values (winter range) & maintained in a primitive state.	Terrestrial Manage big game for the following numbers of animals: 20,000 mule deer 1,600 elk 300 antelope 300 bighorn sheep Continue management of Perins Peak & Paradox pegrine falcon eyries. Maintain existing management of bald eagle nests & expand areas recognized as winter eagle concentration areas. Animas Mountain should be managed for its wildlife values (winter range) & maintained in a primitive state.	Terrestrial Manage big game for the following numbers of animals: 24,000 mule deer 3,000 elk 500 antelope 500 bighorn sheep Continue management of Perins Peak & Paradox peregrine falcon eyries. Continue management of bald eagle nests & winter eagle concentration nests. Animas Mountain should be managed for its wildlife values (winter range) & maintained in a primitive state.	Terrestrial Manage big game for the following numbers of animals: 20,000 mule deer 1,600 elk 300 antelope 300 bighorn sheep Continue management of Perins Peak & Paradox peregrine falcon eyries. Continue management of bald eagle nests & winter eagle concentration nests. Animas Mountain should be managed for its wildlife values (winter range) & maintained in a primitive state.

Area B (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Wildlife (continued)		Continue management of the McElmo Rare Snake & Lizard Research Natural Area. Complete habitat improvements (approx. $200,000).	Complete habitat improvements (approx. $519,000).	Complete necessary habitat improvements to meet forage needs (approx. $1 million).	Complete habitat improvements (approx. $529,000). Invest wildlife funds for structural improvements & vegetation restoration projects to improve high priority riparian habitat at the following drainages: Roc, North & South Mesa, La Sal, & Dry creeks (East & West Fork, Dry Creek Canyon) & Cross, Cow, Calone, Hovenweep, & Bridge canyons.
		Aquatic/Riparian	Aquatic/Riparian	Aquatic/Riparian	Aquatic/Riparian
		Maintain aquatic/riparian habitat on an estimated 400 miles of stream. (Consider improvements only as time & manpower allow.) Estimated costs for implementing habitat improvements will be $191,000 over a 10-year period.	Reestablish river otters in the Dolores River. Improve or enhance aquatic/riparian habitat on the following priority areas: - Upper San Miguel River & its tributaries (39 miles) - Upper Dolores River (11 miles) - Lower San Miguel River & its tributaries (67 miles) - Animas River drainage (24 miles) - Lower Dolores River & its tributaries (53 miles) - SW quadrant streams (55 miles) Develop aquatic/riparian habitat management plans (HMPs) for these six priority areas (including monitoring plans, approx. $473,000 for approx. 249 stream miles).	Improve or enhance aquatic/riparian habitat on the following priority areas: - Upper San Miguel River & its tributaries (54 miles) - Upper Dolores River (52 miles) - Lower San Miguel & its tributaries (67 miles) - Animas River drainage (24 miles) - Lower Dolores River & its tributaries (143 miles) - SW quadrant streams (55 miles) Develop aquatic/riparian HMPs for these six priority areas (including monitoring plans). Estimated costs for implementing habitat improvements over a 10-year period will be approx. $1.3 million on approx. 400 stream miles.	Reestablish river otters in the Dolores River. Improve or enhance aquatic/riparian habitat on the following priority areas: - Upper San Miguel River & its tributaries (44 miles) - Upper Dolores River (30 miles) - Lower San Miguel & its tributaries (20 miles) Develop aquatic/riparian HMPs for these three priority areas (including intensive monitoring plans. The estimated costs for implementing habitat improvements over a 10-year period will be approx. $233,000 for approx. 94 stream miles.

Area B (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Livestock Management	Manage suitable vegetation types under low to moderate intensity for livestock production, with intent to utilize available forage & maintain forage vigor, while not degrading wildlife habitat. Constrain range treatment projects in size, layout & type with intent to enhance wildlife & livestock forage, vegetation & habitat diversity. Reduce number or season-of-use for livestock where needed to provide sufficient forage for wildlife & to protect aquatic/riparian resources, especially on big game winter & spring ranges.		Limit total use to 50% on forage species. Livestock use should be limited where necessary to protect highly preferred species of plants. Maintain an overall cover/forage ratio of 40/60. Limit width of vegetation openings from approx. 150 to 200 yards in big game winter ranges. In pinyon-juniper and shrub vegetation types, retain 35%-40% of original cover when completing vegetation treatments.	Limit total use to 50% on forage species. Livestock use should be limited where necessary to protect highly preferred species of plants. Maintain an overall cover/forage ratio of 40/60. Limit width of vegetation openings from approx. 150 to 200 yards in big game winter ranges. In pinyon-juniper and shrub vegetation types, retain 35%-40% of original cover when completing vegetation treatments.	Limit total use to 50% on forage species. Livestock use should be limited where necessary to protect highly preferred species of plants. Maintain an overall cover/forage ratio of 40/60. Limit width of vegetation openings from approx. 150 to 200 yards in big game winter ranges. In pinyon-juniper and shrub vegetation types, retain 35%-40% of original cover when completing vegetation treatments.
Forestry	Manage forest lands to enhance wildlife resource. Plan wood product sales in wildlife areas to improve big game forage & other wildlife needs.		Provide reasonable opportunity to salvage forest products prior to and following habitat improvement treatments. Provide legal & physical access to vegetation treatments to facilitate salvage of forest products when feasible.	Provide reasonable opportunity to salvage forest products prior to and following habitat improvement treatments. Provide legal & physical access to vegetation treatments to facilitate salvage of forest products when feasible.	Provide reasonable opportunity to salvage forest products prior to and following habitat improvement treatments. Provide legal & physical access to vegetation treatments to facilitate salvage of forest products when feasible.
Minerals	Allow mineral development in all areas not withdrawn from entry. Provide protective stipulations to limit impacts to wildlife habitat or species. Limit &(or) provide protective stipulations for mineral development on habitat for T&E species.	Continue present leasing stipulations for oil & gas in wildlife winter ranges, eagle concentration areas, elk calving grounds, peregrine falcon eyries and sage grouse strutting areas as per existing oil & gas umbrella environmental assessments (EAs).	Continue present leasing stipulations with changes to wildlife winter ranges & eagle concentration areas (see Resource Conservation Map at back of RMP).	Continue present leasing stipulations with changes to wildlife winter ranges and eagle concentration areas as shown in Resource Conservation Alternative (see Resource Conservation Map at back of RMP).	Continue present leasing stipulations with changes to wildlife winter ranges and eagle concentration areas as shown in Resource Conservation Alternative (see Resource Conservation Map at back of RMP).
Lands	Allow for disposal of parcels of public land not determined to be significant and manageable for wildlife habitat. Major utility		Pursue exchange of public lands to enhance wildlife values in Dry Creek Basin. Primary consideration for exchange	Pursue exchange of public lands to enhance wildlife values in Dry Creek Basin. Primary consideration for exchange should be given	Pursue exchange of public lands to enhance wildlife values in Dry Creek Basin. Primary consideration for exchange shouldbe given

Area B (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Lands (continued)	corridors would generally be excluded except on case-by-case basis depending on site-specific impacts of proposal. Acquire or exchange land when management opportunities for wildlife are enhanced. Acquire fishing easements on acreages associated with priority streams. Allow other land actions when they will result in minimal adverse impacts or when they are beneficial to wildlife.		should be given to CDOW; however, other opportunities which may enhance wildlife values will not be dismissed.	to CDOW; however, other opportunities which may enhance wildlife values will not be dismissed.	to CDOW; however, other opportunities which may enhance wildlife values will not be dismissed.
Soils and Water	Maintain soil productivity, minimize man-caused soil erosion and strive to achieve adequate vegetation cover for watershed protection and plant vigor. Maintain or improve water quality and quantity for multiple-use resource needs. Maintain minimum instream flows for wildlife & fishery needs.				
Fire	Provide level of protection from wildfire that will result in least total cost and will generally enhance wildlife management values. Use prescribed fire when possible to enhance wildlife habitat.				
Access	Provide administrative access to public land for managing wildlife habitat. Provide very little or no maintenance to roads. Close & reclaim any abandoned or poorly designed roads. Acquire public access where needed to allow wildlife-related recreation (including hunting & fishing in under-utilized areas).		Acquire administrative access to McKenna Peak for potential peregrine falcon eyrie management.	Acquire access to Chromo Mesa to enhance all management & public hunting opportunities. Acquire administrative access to Roc Creek.	Acquire access to Chromo Mesa to enhance all management & public hunting opportunities. Acquire administrative access to Roc Creek.

Management Guidance for Area C: Emphasis on Recreation

BLM's recreation program is structured to the intensity and type of recreation management required. There are two primary types of recreation management situations that are recognized and which guide the direction of management emphasis in the RMP area. The first, Special Recreation Management Areas (SRMAs), occurs where recreation is defined and recognized as the principal management objective. The second situation, Extensive Recreation Management Areas (ERMAs), occurs where recreation is not the principal management objective but may be an issue or concern of some significance in multiple use management for the area, which is consistent with BLM's role in accommodating the dispersed, largely unstructured recreation that typifies the large expanses of public land in the San Juan RMP area.

The primary management goal is to ensure the continued availability of outdoor recreation opportunities which the public seek and which are not readily available from other public or private entities. Secondary goals include protecting resources, meeting legal requirements for visitor health and safety, and mitigating resource user conflicts involving recreation.

Recreation objectives are to provide dispersed and resource-dependent types of recreation opportunities such as cross-country skiing, hunting, hiking, boating, jeeping, and fishing and to deal with the limited number of situations which require special or more intensive types of recreation management. Decreases in nonrecreational outputs may occur. Investments will be concentrated in SRMAs and in those ERMAs where these recreation program goals apply.

Management objectives would include major investments in facilities and visitor management. Where recreation is not the principal management objective, management direction will largely emphasize the provision of access and visitor information.

Management Direction for Other Resource Values

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Cultural	Develop and protect suitable cultural resource properties for public enjoyment through such practices as interpretive signing, stabilization, etc.			Emphasize cultural resource values & semiprimitive recreation opportunities in Cross, Cahone, Squaw/Papoose, Dolores River, & Tabeguache Creek canyons.	Emphasize cultural resource values & semiprimitive recreation opportunities in Cross, Cahone, Squaw/Papoose, Dolores River, & Tabeguache Creek canyons.
Visual	Preserve scenic values, enhance viewing opportunities and increase variety, where appropriate. Establish site-specific visual quality objectives and design guidelines for landscape development projects during activity planning.		Manage key travel routes in Silverton SRMA to protect sensitive visual values (Class II). Manage upper portion of Dolores (Bradfield Bridge to Disappointment Creek-41 mi) under VRM Class II guidelines. Manage from Disappointment Creek to Gypsum Valley Bridge under VRM Class III guidelines. Manage areas seen from high use, sensitive travel routes in outstanding scenic areas under VRM Class II low to moderate visual contrast design guidelines.	Manage key travel routes in Silverton SRMA to protect sensitive visual values (Class II). Manage upper portion of Dolores (Bradfield Bridge to Disappointment Creek-41 mi) under VRM Class II guidelines. Manage from Disappointment Creek to Gypsum Valley Bridge under VRM Class III guidelines.	Manage Silverton SRMA under VRM Class II guidelines. Manage upper portion of Dolores (Bradfield Bridge to Disappointment Creek-41 mi) under VRM Class II guidelines. Manage from Disappointment Creek to Gypsum Valley Bridge under VRM Class III guidelines. Manage Weber and Menefee as VRM Class II. Manage Tabeguache Creek Canyon area as Outstanding Natural Area.

Area C (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Visual (continued)			The public land along the boundary of Mesa Verde National Park (from the entrance road west) & along the San Miguel River from its upper reaches to Naturita, Colorado, should be managed under VRM Class II guidelines.		The public land along the boundary of Mesa Verde National Park (from the entrance road west) & along the San Miguel River from its upper reaches to Naturita, Colorado, should be managed under VRM Class II guidelines.
Recreation	Manage for a variety of recreation opportunities consistent with classifications determined in Recreational Opportunity Spectrum (ROS) Inventories. Provide necessary visitor management services & facilities required to meet recreation program goals. Manage the Dolores River as an SRMA for water-based recreation opportunities. The entire Silverton portion of the planning area should also be managed as an SRMA for its wide variety of recreation values & opportunities.	Continue management of the Silverton SRMA (45,000 acres). Upon completing McPhee Dam and reservoir & after realizing useable downstream recreation flows, manage 94 miles of the Dolores River for its wild & scenic qualities as per existing Management Framework Plans (MFP) direction. Manage Weber & Menefee mountains as primitive study areas in 1972 land use plans.	Continue management of the Silverton SRMA (45,000 acres). Continue ORV plan in Silverton as per existing MFP management. Upon completing McPhee Dam & reservoir & after realizing useable downstream recreation flows, manage 94 miles of the Dolores River SRMA under limited allocation system for visitor use. As per classifications determined by the BLM's ROS system, manage the Dolores River from Bradfield Bridge to Dove Creek pump station for its semiprimitive nomotorized recreation setting opportunities; from Dove Creek pump station to Disappointment Creek for its semiprimitive motorized setting opportunities, & from Disappointment Creek to Gypsum Valley Bridge under a roaded, natural setting, & from Gypsum Valley Bridge to Bedrock for its primitive values & setting opportunities. Develop a Recreation Area Management Plan for the river that outlines specific management facilities needed. Management emphasis will be directed toward managing the resource-dependent end of the ROS.	Continue management of the Silverton SRMA (45,000 acres). Improve roads, provide interpretive displays, comfort stations & camping area. Continue ORV plan in Silverton as per existing MFP management. Upon completing McPhee Dam & reservoir, & after realizing useable downstream recreation flows, manage 94 miles of the Dolores River SRMA as per classifications determined by the BLM's ROS system, & encourage commercial river use. Manage the Dolores River from the Bradfield Bridge to Dove Creek pump station for its semiprimitive nomotorized recreation setting opportunities & from Dove Creek pump station to Disappointment Creek for its roaded natural setting opportunities; from Disappointment Creek to Gypsum Valley Bridge for its rural settings; & from Gypsum Valley Bridge to Bedrock for its semiprimitive nomotorized recreation setting opportunities. Develop a Recreation Area Management Plan for the river that outlines specific management	Continue management of the Silverton SRMA (45,000 acres). Continue ORV plan in Silverton as per existing MFP management. Develop a Recreation Management Plan for the Silverton SRMA that outlines specific needs for visitor management facilities. Upon completing McPhee Dam & reservoir & after realizing useable downstream recreation flows, manage 94 miles of the Dolores River SRMA as per classifications determined by the BLM's ROS system. Manage the Dolores River from the Bradfield Bridge to Dove Creek pump station for its semiprimitive nomotorized recreation setting opportunities; from Dove Creek pump station to Disappointment Creek for its semiprimitive motorized setting opportunities; from Disappointment Creek to Gypsum Valley Bridge for its rural settings; and from Gypsum Valley Bridge to Bedrock for its primitive values & settings. Determine carrying capacities for the river corridor by specific ROS setting. Develop a Recreation Area Management Plan that

Area C (continued)

Resource/ Activity	General Guidance	Current Management	Specific Management Direction: Resource Conservation	Resource Utilization	Preferred
Recreation (continued)			Typical facilities will include parking areas, campsites, toilets, boat ramps, & informational signing. Manage Lemon Dam & Vallecito Reservoir areas for their semi-primitive nonmotorized values. Close to ORV use & manage under VRM Class II guidelines.	facilities needed to encourage visitor use while not degrading the resource. Manage under allocation system for visitor use. Close the SRMA to ORV use.	addresses & emphasizes cooperative & concurrent recreation management efforts of the USFS & Bureau of Reclamation's dam & reservoir operations. The management plan must also address recreation carrying capacity, visitor use & preferences, & permits. Close the Dolores SRMA to ORV use. Weber & Manefee mountains would be managed for their semiprimitive recreation values. Both areas would be closed to ORVs. Manage Lemon Dam & Vallecito Reservoir areas for their semi-primitive nonmotorized values. Close to ORV use & manage under VRM Class II guidelines.
Wildlife	Manage aquatic & terrestrial wildlife habitat to provide frequent wildlife sightings, recreational hunting & fishing, diverse vegetation cover, etc. Continue to provide necessary management for T&E species. Other wildlife values will be managed as long as they do not conflict with recreation or cultural values.		Allow for the introduction of bighorn sheep & river otters in the Dolores River. Improve the fishery values on the Dolores and San Miguel (including Beaver & Fall creeks) rivers to improve their recreation values. Also improve recreation access to Beaver Creek & the San Miguel River.	Allow for the introduction of bighorn sheep & river otters in the Dolores River. Improve the fishery values on the Dolores & San Miguel (including Beaver & Fall creeks) rivers to improve their recreation values. Also improve recreation access to Beaver Creek & the San Miguel River.	Allow for the introduction of bighorn sheep & river otters in the Dolores River. Improve the fishery values on the Dolores & San Miguel (including Beaver & Fall creeks) rivers to improve their recreation values. Also improve recreation access to Beaver Creek & the San Miguel River. Manage the McElmo Research Natural Area to protect for scientific research. Remove the mineral withdrawal, but continue the no-surface occupancy stipulations for oil & gas leasing.
Livestock Management	Manage livestock under reduced intensity to utilize available forage & maintain plant vigor while not degrading recreation. Do not attempt to maintain or		Manage livestock grazing to make it compatible with recreation use.	Manage livestock grazing to make it compatible with recreation use.	Manage livestock grazing to make it compatible with recreation use.

Area C (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Livestock Management (continued)	Improve forage composition & production through range vegetation treatments with exception of prescribed fire where appropriate. Use "rustic" range improvements near developed recreation areas.				
Forestry	Manage lands suitable for timber & woodland production to enhance recreational opportunities & to maintain healthy stand conditions.		Allow no regulated sales of wood products in the Silverton SRMA, except to control disease & insect outbreaks where necessary. Allow no sales of wood products in the Dolores River SRMA.	Allow no regulated sales of wood products in the Silverton SRMA, except to control disease & insect outbreaks where necessary. Allow no sales of wood products in the Dolores River SRMA.	Allow no regulated sales of wood products in the Silverton SRMA, except to control disease & insect outbreaks where necessary. Allow no sales of wood products in the Dolores River SRMA.
Minerals	Manage mineral development to limit conflict with management of high recreational values. When possible, schedule activities so that conflicts are minimized between recreational & mineral activities. Ensure that site rehabilitation activities follow operating plans & address recreation management objectives.		Withdraw from all forms of mineral entry & allow no mineral leasing in the Dolores River SRMA (from the Bradfield Bridge to the confluence with Disappointment Creek & from Big Gypsum Valley to 1 mile above Bedrock).		Provide for no-surface occupancy for mineral leasing in the Dolores River SRMA (from the Bradfield Bridge to the confluence with Disappointment Creek & from Big Gypsum Valley to 1 mile above Bedrock). Provide for no leasing of oil & gas in Weber & Menefee mountains.
Lands	Allow for disposal of parcels of public land not needed for recreation management. Major utility corridors will not be allowed. Other land actions will be allowed if they are designed to meet the established recreation management objectives. Acquire or exchange land when opportunities for recreation management will be enhanced.			If needed, allow major corridors to cross the Dolores River between Disappointment Creek & the Big Gypsum Valley Bridge.	If needed, allow major corridors to cross the Dolores River between Disappointment Creek & the Big Gypsum Valley Bridge.

Area C (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Soils and Water	Maintain soil productivity, minimize man-caused soil erosion and strive to achieve adequate vegetation cover for watershed protection & plant vigor. Maintain or improve water quality & quantity for multiple use resource needs. Secure sufficient water rights to provide for recreation management needs.				
Fire	Utilize fire management techniques that maintain long-term recreation quality objectives. Suppression of wildfires will generally occur but prescribed fire will be allowed if it will meet or exceed recreation objectives.				
Access	Provide public access to the public lands to enhance the recreation values. Provide a moderate level of maintenance on primary roads to promote user safety. Minimal levels of maintenance will be provided on secondary roads.		Assist in acquiring easements & fee title at sites as recommended in Dolores Downstream Recreation Site Plan Report. Acquire & (or) improve access to Beaver Creek for recreational pursuits.	Assist in acquiring easements & fee title at sites as recommended in Dolores Downstream Recreation Site Plan Report. Acquire & (or) improve access to Beaver Creek for recreational pursuits.	Assist in acquiring easements & fee title at sites as recommended in Dolores Downstream Recreation Site Plan Report. Acquire & (or) improve access to Beaver Creek for recreational pursuits.

Management Guidance for Area D: Emphasis On Wilderness

Management direction will allow for wilderness management in accordance with the Wilderness Act of 1964. The objective of management is to provide predominantly untrammeled, natural environments for the physical, biologic and social components of wilderness. The physical and biologic components are managed so that natural processes are unimpeded by human activities or use. Natural processes, including naturally occurring fire, soil erosion and insect and disease cycles, proceed unrestricted by man. Emphasize high levels of solitude, few party encounters, and high opportunities for challenge, risk and self-reliance. Human travel is cross-country or by use of a trail system. Recreation use will be consistent with wilderness resource management or will be restricted and prohibited when or where needed.

Management Direction for Other Resource Values

Resource/ Activity	General Guidance	Specific Management Direction			
		Current Management	Resource Conservation	Resource Utilization	Preferred
Cultural	Allow no development of cultural resources (other than stabilization) for recreation purposes. Allow use of cultural resource properties for religious or research purposes only when such use will not degrade wilderness values.		Provide for cultural resource management & interpretation of the high value resources contained in the Tabeguache Creek, Squaw/Papoose, Cross, Dolores River, & Cahone canyon WSAs.		Protect & interpret unique & significant values in the Dolores River Canyon WSA.
Recreation	Allow opportunities for primitive and unconfined recreation activities featuring solitude; the chance to experience unmodified, natural ecosystems; & to travel cross-country in an environment where success or failure is directly dependent on ability, knowledge & initiative; but in such a manner as to prevent deterioration of the wilderness resource. ORV use is not allowed. Manage recreation use to provide users with experiences & psychological outcomes expected in this type of setting. Control social & physical-carrying capacity to provide such outcome. Establish site-specific visual quality objectives & design guidelines for landscape development projects during activity planning.		Use a permit system to limit use in WSAs. Establish visual Class I design standards for all eight WSAs.		Provide for nonmotorized river running activities compatible with the wilderness resource in the Dolores River Canyon WSA. Establish visual Class I low contrast design standards for Dolores River Canyon WSA.

Area D (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Wilderness	Manage any recommended WSAs per the Wilderness Act of 1964.		Recommend all eight WSAs (Cahone, Cross, & Dolores River canyons, McKenna Peak, Menefee & Weber mountains, Squaw/Papoose Canyon, & Tabeguache Creek Canyon) for wilderness designation.		Recommend the Dolores River Canyon WSA for wilderness designation.
Wildlife	Permit fish & wildlife research or inventories. Allow natural distribution & population of vegetation & wildlife species indigenous to area to maintain natural balance with each other, their habitats, & man. Provide for nonimpairing wildlife improvement to improve terrestrial or aquatic/riparian habitat.		Allow nonimpairing aquatic/riparian improvements in the Dolores River Canyon WSA. Wildlife winter range values should be managed in Weber & Menefee mountains & McKenna Peak WSAs. Allow the introduction or reintroduction of bighorn sheep & river otters into the Dolores River Canyon WSA.		Allow nonimpairing aquatic/riparian improvements & introduction or reintroduction of bighorn sheep & river otters into the Dolores River Canyon WSA.
Wild Horses	Manage wild horses to promote their free-roaming state & prevent degradation of the resources while maintaining wilderness values.		Manage 75 wild horses in the McKenna Peak WSA. Management would be conducted in a nonimpairing manner. Allow helicopter use to manage horses.		
Livestock Management	Manage for improved range condition. Do not use vegetation manipulations to improve forage production. Emphasize primitive, natural material for water developments & range structures that are approved in wilderness management plan.				
Forestry	Allow no harvesting of forest products. Available forest land will remain in the Commercial Forest lands base until the area has been designated as wilderness.				

Area D (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Minerals	Administer all mineral activity as required by Section 4(d) of the Wilderness Act of 1964. Deny issuance of any future mineral leases within the wilderness area.				
Lands	Acquire or exchange private lands & subsurface mineral estates within wilderness areas that will enhance wilderness values or manageability. Allow no utility corridors & no new facilities except those authorized through Wilderness Act provisions. Remove any existing, nonconforming structures unless they are determined to be of cultural or historic value or necessary for administering the area.		Acquire private lands (40 acres) & minerals (120 acres) within the Manefee Mountain WSA. Acquire Section 36 (State of Colorado) in Weber Mountain WSA. Acquire private land or easements between Bedrock & the northern boundary of the Dolores River Canyon WSA to improve its management. Coordinate these acquisition efforts with recommendations that are detailed in the Dolores Downstream Site Selection Report, which recommends acquisition & development of a boating access site (to be constructed as part of the Dolores Project--McPhee Dam) near Bedrock Bridge. Acquire Section 36 (State of Colorado) adjacent to McKenna Peak WSA. Do not renew Bureau of Reclamation powersite classifications on the Dolores River Canyon WSA when reviewed.		Acquire private land or easements between Bedrock & the northern boundary of the Dolores River Canyon WSA to improve its management. Coordinate these acquisition efforts with recommendations that are detailed in the Dolores Downstream Site Selection Report, which recommends acquisition & development of a boating access site (to be constructed as part of the Dolores Project--McPhee Dam) near Bedrock Bridge. Do not renew Bureau of Reclamation powersite classifications on the Dolores River Canyon WSA when reviewed.
Soils and Water	Stabilize & rehabilitate man-caused disturbances if identified in a wilderness management plan. Maintain or improve water quality & quantity through non-impairing means.				

Area D (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Fire	Perpetuate & maintain ecosystems within wilderness by natural occurrence of fire, insects & disease. Suppression may be taken on man-caused fires, fires threatening human lives & property, or fires which threaten to escape from wilderness to adjacent areas with more restrictive fire prescriptions.				
Access	Allow no motorized, ORV use. Trail construction for foot & (or) horseback will be addressed in a wilderness management plan.		Close cherrystem roads & ways in five WSAs (Tabeguache Creek, Cahone Canyon, Squaw/Papoose Canyon, Dolores River Canyon, & Cross Canyon).		Close ways in the Dolores River Canyon WSA.

Management Guidance for Area E: Emphasis on Mineral Development

Management direction will emphasize mineral development on the public lands. Mineral values indicate that significant reserves of valuable minerals are present and that development is either currently ongoing or will occur within the near future. Other resource uses will occur to the extent that they are compatible with mineral development. Limited expenditures of public resources will be used on developing the present land resources. Livestock grazing will continue, wildlife habitat will be maintained where feasible, and cultural resources will receive the protection currently afforded by law.

Management Direction for Other Resource Values

Resource/ Activity	General Guidance	Specific Management Direction			
		Current Management	Resource Conservation	Resource Utilization	Preferred
Cultural	Protect & manage important cultural resource properties.				
Recreation	Provide recreation opportunities that do not conflict with mineral development. Allow motorized, ORV use. Establish site-specific visual quality objectives & design guidelines for landscape development projects during activity planning.				
Wildlife	Protect T&E species & maintain or improve their habitat. Provide for minimal investments to enhance key wildlife species.	Continue present leasing stipulations for oil & gas in wildlife winter ranges, eagle concentration areas, elk calving grounds, peregrine falcon eyries & sage grouse strutting areas as per existing oil & gas umbrella EAs.	Continue present leasing stipulations with changes to wildlife winter ranges & eagle concentration areas (see Resource Conservation Map at back of RMP).	Continue present leasing stipulations with changes to wildlife winter ranges & eagle concentration areas (see Resource Conservation Map at back of RMP).	Continue present leasing stipulations with changes to wildlife winter ranges & eagle concentration areas (see Resource Conservation Map at back of RMP).
Livestock Management	Manage suitable vegetation types under moderate intensity for livestock production, with the intent to use available forage & maintain forage vigor. Reduce the number of season-of-use for livestock where needed to minimize impacts to mineral operations & revegetation efforts or to minimize erosion from site. Limit range improvements on areas designated for				

Area E (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Livestock Management (continued)	mineral development to protect investments. Adjust livestock use as land is removed from production for mineral purposes.				
Forestry	Allow for the sale or disposal of forest products or timber that may be lost in mineral development or that is needed for managing the resource. Meet demand without degradation or conflict.				
Minerals	Allow mineral development on all areas not specifically excluded from development. Provide protective stipulations to limit impacts to other resource values.	Continue oil, gas, & CO_2 operations throughout planning area (183,000 acres in areas designated as Known Geologic Structures [KGSs]). Continue cooperative management to protect surface resources on 19,800 acres of Department of Energy (DOE) lease tracts. Continue approved operations of 4,500 acres of hard rock mining under 43 Code of Federal Regulations (CFR) 3809 regulations. Continue sodium lease (120 acres). Continue sand & gravel operations (880 acres). Provide protective management of the fossils at the Sawpit site.	Continue oil, gas, & CO_2 operations throughout planning area (183,000 acres in areas designated as KGSs). Continue cooperative management to protect surface resources on 19,800 acres of DOE lease tracts. Continue approved operations of 4,500 acres of hard rock mining under 43 CFR 3809 regulations. Continue sodium lease (120 acres). Continue sand & gravel operations (880 acres). Provide protective management of the unique fossils in the Placerville area.	Continue oil, gas, & CO_2 operations throughout planning area (183,000 acres in areas designated as KGS). In addition, 10,500 acres of potential oil & gas trends are shown. Continue cooperative management to protect surface resources on 19,800 acres of DOE lease tracts. Continue approved operations of 4,500 acres of hard rock mining under 43 CFR 3809 regulations. Continue sodium lease (120 acres). Continue sand & gravel operations (880 acres). In addition, 1,200 acres on Ewing Mesa would be developed for sand & gravel. Manage Cross & Squaw/Papoose canyons & the Rare Snake & Lizard Area as "Areas of Critical Mineral Potential" (ACMPs).	Continue oil, gas, & CO_2 operations throughout planning area (183,000 acres in areas designated as KGSs). Continue cooperative management to protect surface resources on 19,800 acres of DOE lease tracts. Continue approved operations of 4,500 acres of hard rock mining under 43 CFR 3809 regulations. Continue sodium lease (120 acres). Continue sand and gravel operations (880 acres). In addition, 400 acres on Ewing Mesa would be developed for sand & gravel. Provide protective management of the unique fossils in the Placerville area.

Area E (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Minerals (continued)		Continue existing coal leases (National King Coal, 340 acres; Perma Resources, 90 acres).	Allow coal leasing on 32,000 acres in Hay Gulch-Cherry Creek area & 2,180 acres of lands which are under private surface ownership but contain Federal subsurface mineral rights within the San Juan National Forest.*	Allow coal leasing on 1,480 acres in the Nucla Known Recoverable Coal Resource Area (KRCRA), 1,240 acres in the East Cortez KRCRA, & 54,000 acres in the Durango KRCRA.*	Allow coal leasing on 1,480 acres in the Nucla KRCRA & 46,000 acres in the Durango KRCRA.*
Lands	Allow for disposal of parcels of public land not needed for mineral development. Major utility corridors will be allowed as long as they don't conflict with mineral development. Allow other land actions as long as they don't limit mineral development. Acquire or exchange land & subsurface mineral estate when mineral development will be enhanced.				
Soils and Water	Maintain soil productivity & minimize soil erosion when possible. Maintain water quality & quantity when possible for resource needs.				
Fire	Provide a level of protection from wildfire that will result in the least total cost & will protect mineral developments on the public lands.				
Access	Provide or maintain public access so as not to impede mineral development. Work with mineral developers to assure roads are maintained for public safety.				

* These priority areas were determined based on 1983 coal data & indications of interest by industry. The remaining coal lands that were not determined to be nonsuitable or identified as priorities for future leasing will be managed for other multiple use considerations. These lands would be made available for future leasing only when the coal priority areas had been depleted or a significant demand was expressed that could not be met by the existing coal priority areas.

Management Guidance for Area F: Emphasis on Cultural Resources

Management direction will emphasize the preservation, management, and use of the cultural resource properties found within the area. Emphasis will be on protecting the soil, vegetation and wildlife resource to enhance the natural environment of the area and hence the cultural resource setting. Mineral resources will be developed while constrained by existing laws, policy and regulations pertaining to cultural resources. Other resource and land management activities will be constrained to avoid conflict with preservation, development, and protective objectives.

Management Direction for Other Resource Values

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Cultural	Manage cultural resources for protection, preservation, investigation & public use (i.e., development & interpretation), where appropriate.	Manage the Anasazi Heritage Center (annual operating costs - $300,000).	Manage the Anasazi Heritage Center (annual operating costs - $300,000).	Manage the Anasazi Heritage Center (annual operating costs - $300,000).	Manage the Anasazi Heritage Center (annual operating costs - $300,000).
		Continue management on the following cultural sites/areas: Cannonball Ruin Dominguez-Escalante Ruins Lowry Ruin McLean Basin Towers Sand Canyon	Emphasize management & develop cultural management plans on the following cultural sites/areas (approx. $111,000 annual operational costs): Bull Canyon Cannonball Ruin Cow Mesa Dolores Cave Dominguez-Escalante Ruins East Rock Canyon Hamilton Mesa Indian Henry's Cabin Lowry Ruin McLean Basin Towers Mockingbird Mesa Painted Hand Petroglyphs Painted Hand Ruin Sand Canyon Squaw/Papoose Canyon Tabeguache Pueblo	Emphasize management & develop cultural management plans on the following cultural sites/areas (approx. $114,000 annual operational costs): Bull Canyon Cahone Canyon Cannonball Ruin Cow Mesa Cross Canyon Dolores Cave Dominguez-Escalante Ruins East Rock Canyon Hamilton Mesa Indian Henry's Cabin Lowry Ruin McLean Basin Towers Mockingbird Mesa Painted Hand Petroglyphs Painted Hand Ruin Sand Canyon Squaw/Papoose Canyon Tabeguache Canyon Tabeguache Pueblo	Emphasize management & develop cultural management plans on the following cultural sites/areas (approx. $114,000 annual operational costs): Bull Canyon Cahone Canyon Cannonball Ruin Cow Mesa Cross Canyon Dolores Cave Dominguez-Escalante Ruins East Rock Canyon Hamilton Mesa Indian Henry's Cabin Lowry Ruin McLean Basin Towers Mockingbird Mesa Painted Hand Petroglyphs Painted Hand Ruin Sand Canyon Squaw/Papoose Canyon Tabeguache Canyon Tabeguache Pueblo
Recreation	Make areas available for day use activities, where feasible. Construct public convenience developments such as restrooms, observation areas, or interpretative trails. Provide input into development & operation of			Manage Cross, Cahone, Squaw/Papoose & Tabeguache Creek canyons under VRM Class II standards, close to ORVs, & provide for a semiprimitive non-motorized recreation experience in these above areas.	Manage Cross, Cahone, Squaw/Papoose & Tabeguache Creek canyons under VRM Class II standards, close to ORVs, & provide for a semiprimitive non-motorized recreation experience in these above areas.

Area F (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Recreation (continued)	Anasazi Heritage Center. Develop public or visitor management plans for areas. Establish site-specific visual quality objectives & design guidelines for interpretation & visitor management during activity planning.				Manage the Tabeguache Creek cultural emphasis area as an Outstanding Natural Area. Develop Recreation Activity Management plans for Lowry & Dominguez-Escalante cultural sites.
Wildlife	Protect & maintain wildlife habitat. Where feasible, complete wildlife habitat improvements to enhance wildlife viewing in association with cultural values. Continue to manage T&E species habitat to protect the species.				
Livestock Management	When necessary, reduce or control livestock grazing to protect cultural resources.				
Forestry	Allow removal of forest products only when compatible with cultural, wildlife, or recreation values or when done to improve safety.				
Minerals	Pursue withdrawal from mineral entry on any important cultural properties. In the event withdrawal is not made (and on areas not withdrawn), supervise the activities of claimants, lessees, & permittees to insure minimum impacts on cultural values. Use no-surface occupancy stipulations to protect important cultural values.	Continue present protection & no-surface occupancy for oil & gas on Sand & East Rock canyons; Cannonball, Lowry, & Dominguez-Escalante Ruins, McLean Basin Towers; & Painted Hand Petroglyphs.	Continue present protection & no-surface occupancy for oil & gas on Sand & East Rock canyons; Cannonball, Lowry, & Dominguez-Escalante Ruins, McLean Basin Towers; & Painted Hand Petroglyphs. Withdraw from mineral entry & provide no-surface occupancy for oil & gas leasing on: Painted Hand Ruin, Dolores Cave, Tabeguache Pueblo, Bull Canyon Rockshelter, & Indian Henry's Cabin.	Continue present protections & no-surface occupancy for oil & gas on Sand & East Rock canyons; Cannonball, Lowry, & Dominguez-Escalante Ruins, McLean Basin Towers; & Painted Hand Petroglyphs. Withdraw from mineral entry & provide for no-surface occupancy for oil & gas leasing on Painted Hand Ruin, Dolores Cave, Tabeguache Pueblo, Bull Canyon Rockshelter, & Indian Henry's Cabin.	Continue present protection and no-surface occupancy for oil and gas on Sand and East Rock canyons; Cannonball, Lowry, Dominguez-Escalante Ruins, McLean Basin Towers; and Painted Hand Petroglyphs. Withdraw from mineral entry & provide for no-surface occupancy for oil & gas leasing on Painted Hand Ruin, Bull Canyon Rockshelter, Dolores Cave, Tabeguache Pueblo, & Indian Henry's Cabin.

Area F (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Minerals (continued)					Provide for no-surface occupancy stipulations or no leasing for oil & gas on Cahone, Cross, Squaw/Papoose, & Tabeguache Creek canyons to protect cultural values. Withdraw approx. 560 acres along the creek bottom in Tabeguache Canyon from mineral entry.
Lands	Allow no disposal of public land where significant cultural values are involved. Major utility corridors (powerlines of 115 kv & above & pipelines 6" in diameter & above) would generally not be allowed. Allow other land actions to occur when they would result in minimal adverse impacts or when they will be beneficial to cultural resource management. Acquire or exchange land when cultural management will be enhanced.				
Soils and Water	Maintain soil productivity, minimize man-caused soil erosion & stabilize & rehabilitate areas with severe man-caused soil erosion when feasible. Maintain water quality & quantity. Apply for water rights & protect riparian zones on springs associated with cultural sites.				
Fire	Provide level of protection on all fires that will protect the cultural resource values.				

Area F (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Access	Provide administrative access to public land to enhance the management of the cultural resource. Provide public access to some of the cultural areas where public use will be managed. Provide maintenance of roads to a level of minimum standards for user safety. Close roads when necessary to limit access to protect cultural values.		Limit public access to Mockingbird Mesa, Bull Canyon Rockshelter, Indian Henry's Cabin, & Sand & East Rock canyons to foot or horse only & limit vehicle access to authorized vehicles only.	Limit public access to Mockingbird Mesa, Bull Canyon Rockshelter, & Indian Henry's Cabin to foot or horse only & limit vehicle access to authorized vehicles only. Acquire easement into Sand Canyon area. Acquire administrative access to Cannonball Mesa & Yellowjacket Canyon.	Limit public access to Mockingbird Mesa, Bull Canyon Rockshelter, Sand & East Rock canyons, & Indian Henry's Cabin to foot or horse only & limit vehicle access to authorized vehicles only. Acquire easement into Sand Canyon area. Acquire administrative access into Cannonball Mesa & Yellowjacket Canyon.

Management Guidance for Area G: Emphasis on General Natural Resource Management

Management direction for these areas will consist of general multiple use as prescribed in the Federal Land Policy and Management Act (FLPMA) of 1976. The resource values contained in these areas are not significant to the degree that a dominant use exists. Management guidance will consist of existing laws, policy, and manuals concerning each resource program.

Management Direction for Other Resource Values

Resource/ Activity	General Guidance	Specific Management Direction			
		Current Management	Resource Conservation	Resource Utilization	Preferred
Cultural	Manage cultural resource properties in accordance with applicable laws, regulations & public interest.				
	Provide for dispersed types of recreation opportunities. Utilize sign, maps, etc., to help manage the dispersed use. Allow ORV use.				
	Establish site-specific visual quality objectives & design guidelines for landscape development projects during activity planning.				
Wildlife	Protect T&E species & maintain or improve their habitat. Manage all other habitat to provide satisfactory conditions.				
Livestock Management	Manage vegetation resource so it maintains itself satisfactorily with a generally upward trend. Rehabilitate needs & other resource values.				
Forestry	Provide a sustained yield of forest products consistent with land capability, suitability, protection needs & other resource values.				
Minerals	Provide for mineral development in all areas not withdrawn from mineral entry. Provide protective stipulations to limit impacts to other resource values.				

Area G (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Lands	Allow for disposal of parcels of public land not needed for resource management. Acquire or exchange land when resource management opportunities will be enhanced. Major utility corridors would be allowed with protective stipulations to prevent or limit adverse impacts to other resource values. Allow other land actions to occur with appropriate stipulations.				
Soils and Water	Maintain soil productivity, minimize man-caused soil erosion, & strive to achieve adequate vegetation cover for watershed protection & plant vigor.				
	Maintain water quality & quantity for resource needs. Secure sufficient water rights to provide for resource management.				
Fire	Provide a level of protection from wildfire that will result in the least total cost & will generally enhance resource conditions of the vegetation. Use prescribed fire when possible to enhance resource conditions.				
Access	Provide administrative & public access, where possible. Maintain roads to a level of minimum standards for public safety.				

Management Guidance for Area H: Emphasis on Public Land Disposal

Management of these areas will be for the disposal of the public lands; these areas will be subjected to additional screening and clearances before any tracts identified for disposal in this plan may be transferred from BLM control. These activities include mineral assessment, cultural resource clearances, environmental analysis, appraisal and similar site-specific actions. Little or no public funds will be spent upon these tracts for resource management; funds would only be spent to correct public health and safety problems or to correct severe resource conditions which cannot be allowed to continue.

Management Direction for Other Resource Values

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Cultural	Provide cultural resource inventories & clearances so disposal of the tracts can occur. Pending disposal, manage the cultural resources under present laws & regulations.				
Recreation	Provide for very limited dispersed recreation activity. Allow motorized, ORV use. Establish site-specific visual quality objectives & design guidelines for landscape development projects during activity planning.			Consider disposal of the Indian Springs site to CDOW as part of their Mike Young property management. Also consider CDOW cooperatively managing those heavily used hunter camp sites along the road between Miramonte Reservoir & Indian Springs (near Hamilton Mesa).	
Wildlife	Provide for T&E species inventories & clearance prior to disposal.				
Livestock Management	Allow limited management of the rangeland to occur. Spend no public funds on rangeland improvements. Complete procedural notifications to grazing permittees.				
Forestry	Allow timber to be harvested & forest products to be used.				

Area H (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Minerals	Continue to manage the mineral program for development. Retain all mineral rights unless an exception can be documented for transferring the mineral rights.		Transfer all mineral rights with the surface unless: (1) mineral values can be documented to justify retaining the mineral rights, or (2) transferring the mineral rights is prevented by law or regulation.	Transfer all mineral rights with the surface unless: (1) mineral values can be documented to justify retaining the mineral rights, or (2) transferring the mineral rights is prevented by law or regulation.	Transfer all mineral rights with the surface unless: (1) mineral values can be documented to justify retaining the mineral rights, or (2) transferring the mineral rights is prevented by law or regulation.
Lands	Provide for disposal of the public lands. Major utility corridors would be allowed. Allow other land actions to proceed.	Allow approx. 16,000 acres for land disposal (through sales, exchanges, or any other title transfer means).	Allow approx. 18,000 acres for land disposal (through sales, exchanges, or any other title transfer means).	Allow approx. 33,000 acres for land disposal (through sales, exchanges, or any other title transfer means).	Allow approx. 21,800 acres for land disposal (through sales, exchanges, or any other title transfer means).
Soils and Water	Maintain soil productivity, minimize man-caused soil erosion & maintain a minimum amount of vegetation cover for watershed protection.				
	Maintain present water quality & quantity. Do not acquire water rights for resource needs unless an exception can be documented. Land disposals must be in conformance with Executive Order (E.O.) 11988 - Floodplain Management.				
Fire	Provide for a limited level of fire management. Suppress wildfires which may be threatening adjacent private, state or Federal property.				
Access	Acquire no access to these tracts unless an exception can be documented. Provide very little or no maintenance of roads. Reserve access rights across parcels when needed for public or resource management.				

Management Guidance for Area I: Emphasis on Wild Horses

Management direction will emphasize managing the wild horse herds present on public land by providing necessary forage and water. Some investments would probably occur to enhance the habitat for the horses and also to reduce conflicts with other uses in the area. Wild horse management plans will be developed. Reducing livestock and possibly wildlife may need to occur to maintain forage production and vigor. Dispersed recreation, including wild horse viewing, will continue. Woodland products will be made available on a limited basis. Fire will be used to enhance forage production.

Management Direction for Other Resource Values

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Cultural	Protect important cultural resource properties.				
Recreation	Manage for dispersed recreation as the primary recreation activity. Encourage nonmotorized recreation activities such as wild horse viewing, hiking, etc. Establish site-specific visual quality objectives & design guidelines for landscape development projects during activity planning.				
Wildlife	Protect T&E species & maintain or improve their habitat. Provide minimal investments to enhance key wildlife species.		Provide sufficient forage for wintering big game species in the Spring Creek herd area.		Provide sufficient forage for wintering big game species in the Spring Creek herd area.
Livestock Management	Manage livestock to reduce or eliminate conflicts with wild horses. Maintain forage in fair condition with an upward trend. All livestock waters should be provided year-round. Reduce numbers or season-of-use to eliminate forage competition. Assure that all range projects are compatible with wild horse use. Restrict licensing of domestic horses in wild horse areas.				
Wild Horses	Develop a site-specific management plan for the wild horses. Develop necessary improvements (fences, waters, vegetation treatments, etc.) for the long-term management of the herd. Maintain forage in a fair condition with an upward trend.	Continue limited management of 100 horses in the Spring Creek Basin (35,000 acres) & 21 horses in the Naturita Ridge area (8,000 acres).	Intensively manage for 75 horses (carrying capacity) in the Spring Creek Basin. Manage for 50 horses in the Naturita Ridge area. Designate both as horse ranges. Develop herd management plan & implement necessary improvements (i.e., fences & water developments).	Remove all wild horses in the planning area.	Manage for 50 wild horses in Spring Creek Basin. Designate as horse range. Develop herd management plan & implement necessary improvements (i.e., fences & water developments). Remove all wild horses from the Naturita herd area.

Area I (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Forestry	Manage the forest lands to enhance the vegetation condition for the wild horses & for insect & disease control.				
Minerals	Allow mineral development in all areas not withdrawn from mineral entry. Provide protective stipulations to limit impacts to wild horses.				
Lands	Allow for disposal of parcels of public land not needed for wild horse management. Major utility corridors would be allowed with protective stipulations to prevent or limit impacts to the wild horses. Allow other land actions, including acquisition or exchange, when they will result in minimal adverse impacts or when they will be beneficial to wild horse management.				
Soils and Water	Maintain soil productivity, minimize man-caused soil erosion & strive to achieve vegetation cover for watershed protection & plant vigor.				
	Maintain water quality & quantity for resource needs. Secure water rights to provide for management needs.				
Fire	Provide a level of protection from wildfire that will result in the least total cost & that will generally enhance wild horse management. Use prescribed fire when possible to enhance vegetation production.				
Access	Provide administrative & public access to public land to enhance wild horse viewing & management. Provide maintenance of roads to a level of minimum standards for user safety.				

Management Guidance for Area J: Emphasis on Forestry and Wood Products

This guidance is designed to increase the production and utilization of wood fiber, firewood, post and poles. Emphasis is upon improved wood production and utilization resulting in extensive modification of tree and other vegetation cover. Investments may be made for forest management activities. Investments (in other emphasis areas) that are commensurate with level wood fiber production will be made. Opportunities will generally be moderate for wildlife management and for dispersed recreation. Livestock grazing will occur; however, disruptions may occur due to timber management actions or objectives.

Management Direction for Other Resource Values

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Cultural	Protect important cultural resource properties.				
Recreation	Manage for dispersed recreation as the primary recreation activity. Allow motorized, ORV use. Establish site-specific visual quality objectives and design guidelines for landscape development projects during activity planning.				
Wildlife	Protect T&E species & maintain or improve their habitat. Provide investments to enhance wildlife species which will benefit from uneven-aged timber management.	Coordinate efforts on a case-by-case basis to ensure aquatic/riparian resources are protected &, in some cases, improved.	Coordinate efforts on a case-by-case basis to ensure aquatic/riparian resources are protected &, in some cases, improved.	Coordinate efforts on a case-by-case basis to ensure aquatic/riparian resources are protected &, in some cases, improved.	Coordinate efforts on a case-by-case basis to ensure aquatic/riparian resources are protected &, in some cases, improved.
Livestock Management	Allow livestock grazing on those areas & times when it will not have negative effects on timber management operations & objectives for the area. Range vegetation treatments will generally not be allowed in timber areas. Range improvements will be designed to minimize conflicts with forest emphasis.				
Forestry	Manage lands suitable for timber production. Invest necessary funds to provide for intensive management of the forest resource. Provide firewood, Christmas trees, & other wood products.	Manage timber species on all available & capable lands & pinyon-juniper with a combination of even & uneven-age systems. Manage aspen under an even-age system. Limit open patchcuts to 20 acres or less	Manage timber species on all available & capable lands & pinyon-juniper with a combination of even & uneven-age systems. Manage aspen for maximum timber production & to favor wildlife management (80-yr	Manage timber species on all available & capable lands & pinyon-juniper with a combination of even & uneven-age systems. Manage aspen under an even-age system. Limit open patchcuts to 20 acres or less in commercial	Manage timber species on all available & capable lands & pinyon-juniper with a combination of even & uneven-age systems. Manage aspen under an even-age system. Limit open patchcuts to 20 acres or less in commercial

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Forestry (continued)		In commercial forest types & 40 acres in woodland types. Regenerate all patchcuts, shelterwood, & selection harvest cuts, naturally or artifically, within 15 years. Continue intensive management on approx. 9,540 acres of forest lands. The estimated allowable harvest would be 5.6 million board feet (MMBF) per decade. Continue to provide woodland products (firewood, posts, poles, etc.).	rotation). Clearcut aspen in blocks up to 20 acres. Clearcut entire clones. Limit open patchcuts to 20 acres or less in commercial forest types & 40 acres in woodland types. Regenerate all patchcuts, shelterwood, & selection harvest cuts, naturally or artificially, within 15 years. Manage approx. 7,930 acres for intensive forest management. Estimated allowable harvest would be 4.7 MMBF per decade. Manage approx. 35,170 acres to provide woodland products (firewood, posts, poles, etc.). Estimated allowable harvest would be 5.3 MMBF (10,600 cords).	forest types & 40 acres in woodland types. Regenerate all patchcuts, shelterwood, & selection harvest cuts, naturally or artificially, within 15 years. Continue management of all operable woodland & commercial sawtimber in other emphasis areas. Manage approx. 11,220 acres for intensive forest management. Estimated allowable harvest would be 6.6 MMBF per decade. Manage approx. 42,130 acres to provide woodland products (firewood, posts, poles, etc.). Estimated allowable harvest would be 6.4 MMBF (12,800 cords).	forest types & 40 acres in woodland types. Regenerate all patchcuts, shelterwood, & selection harvest cuts, naturally or artificially, within 15 years. Continue management of all operable woodland & commercial sawtimber in other emphasis areas. Manage approx. 10,960 acres for intensive forest management. Estimated allowable harvest would be 6.5 MMBF per decade. Manage approx. 42,130 acres to provide woodland products (firewood, posts, poles, etc.). Estimated allowable harvest would be 6.4 MMBF (12,800 cords) per decade.
Minerals	Allow mineral development in all areas not withdrawn from mineral entry. Provide protective stipulations to limit impacts to the forest resource.				
Lands	Allow for disposal of parcels of public land not needed for forest management. Acquire or exchange lands when forest management will be enhanced. Major utility corridors would generally not be allowed in commercial forestry but would be allowed in woodland & exceptions could occur with specific analysis. Allow other land actions when they will result in minimal adverse impacts or when they will be beneficial to forest management.				

Area J (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Soils and Water	Maintain soil productivity, minimize man-caused soil erosion & ensure utilization of forestry practices which will provide for minimal soil losses.				
	Maintain water quality & quantity for resource needs. Timber harvesting & associated activities will be conducted in a manner that will not degrade the water quality (from both point & nonpoint sources) below the Colorado Department of Health & Water Quality Standards & Classifications.				
Fire	Provide a level of protection from wildfire that will result in a least total cost & will enhance forest resources. Use prescribed fire when possible to enhance forest management objectives.				
Access	Provide administrative and, where needed, public access to public land to enhance the forest management. Provide necessary maintenance of roads to ensure timber management practices can occur as planned.				

Management Guidance for Area K: Emphasis on Soils and Water

Management direction will emphasize improving water quality and soil stability. Resource data indicates that significant water quality problems exist in some areas and management action may improve the existing situation. In addition, soil erosion or fragile soils exist that are in need of more intensive management. Other resource uses will occur to the extent that they are compatible with the water and soil program direction for the specific areas. Uses by surface-disturbing activities may be limited or denied to improve resource conditions. Livestock grazing will be allowed but possibly at a reduced level; ORV use would be limited or excluded. Other resources, such as wildlife, cultural, etc., would be protected or enhanced under this emphasis area.

Management Direction for Other Resource Values

Resource/ Activity	General Guidance	Specific Management Direction			
		Current Management	Resource Conservation	Resource Utilization	Preferred
Cultural	Protect important cultural resource properties.				
Recreation	Manage for dispersed recreation as the primary recreation activity. Permit yearlong, nonmotorized recreation activities throughout the area. Establish site-specific visual quality objectives & design guidelines for landscape development projects during activity planning.			Limit ORV use to existing roads & trails in the Disappointment Valley emphasis area.	Limit ORV use to existing roads & trails in the Disappointment Valley emphasis area.
Wildlife	Protect T&E & sensitive species habitat. Maintain or improve wildlife habitat through interdisciplinary design of water or vegetation improvements & maintenance of diversity of vegetation. Allow wildlife habitat improvements that are compatible with the goals of the soils & water program for specific areas.				
Livestock Management	Manage suitable vegetation types under low to moderate intensity for livestock production with the intent to use available forage & maintain plant vigor. Reduce the number or season-of-use for livestock where needed		Provide intensive grazing management in the Disappointment Valley to limit use of forage species & limit spring grazing to improve salinity & erosion problems.	Provide intensive grazing management in the Disappointment Valley to limit use of forage species & limit spring grazing to improve salinity & erosion problems.	Provide intensive grazing management in the Disappointment Valley to limit use of forage species & limit spring grazing to improve salinity & erosion problems.

Area K (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Livestock Management (continued)	to achieve soils & water program objectives. Maintain or improve range condition by soils & water improvements & through diversifying the vegetation.				
Forestry	Manage forest products & woodlands to meet the goals & objectives of the soil & water program for the specific areas.				
Minerals	Allow for mineral development on all areas not specifically withdrawn from development. Provide protective stipulations to limit impacts to other resource values.				
Lands	Allow for disposal of parcels of land not identified for soils & water management. Acquire or exchange land when soils & water management will be enhanced. Major utility corridors will be allowed but would be subjected to restrictive stipulations to protect fragile soils & water quality. Allow other land actions when they will result in minimal adverse impacts or when they will be beneficial to soils & water management.				
Soils and Water	Maintain or improve water quality & quantity. Encourage development of visual design standards & necessary erosion control structures, vegetation improvements, or salinity reduction measures to improve water quality.	Protect 4,700 acres in Boulder Gulch watershed to ensure water quality for Silverton. Protect water quality in aquifers used for domestic & municipal purposes in the Dry Creek Basin & Tabeguache Creek watersheds.	Protect 4,700 acres in Boulder Gulch watershed to ensure water quality for Silverton. Protect water quality in aquifers used for domestic & municipal purposes in the Dry Creek Basin & Tabeguache Creek watersheds.	Protect 4,700 acres in Boulder Gulch watershed to ensure water quality for Silverton. Protect water quality in aquifers used for domestic & municipal purposes in the Dry Creek Basin & Tabeguache Creek watersheds.	Protect 4,700 acres in Boulder Gulch watershed to ensure water quality for Silverton. Protect water quality in aquifers used for domestic & municipal purposes in the Dry Creek Basin & Tabeguache Creek watersheds.

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Soils and Water	Develop necessary soil protection measures to reduce or prevent accelerated future erosion from fragile sites. Maintain or improve soil productivity, minimize man-caused erosion & maintain vegetation for watershed protection & plant vigor.		Manage 78,000 acres in the following watersheds to reduce erosion and sediment yield: Bridge Canyon Broad Canyon Burn Canyon Disappointment Valley Dry Creek Basin Gypsum Valley Hovenweep Canyon Mud Spring Draw Negro Canyon Paradox Valley Ross Fort Park Yellowjacket Canyon Manage 30,000 acres in Disappointment Valley & Yellowjacket Canyon to reduce salinity in the Colorado River. Reclaim 20 pollution sources (heavy metals) in the Upper Animas River drainage. Approx. cost of this erosion & salinity management would be $650,000.	Manage 50,000 acres in Disappointment Valley & Dry Creek Basin to reduce erosion & sediment. Manage 50,000 acres in Disappointment Valley & Yellowjacket Canyon to reduce salinity in the Colorado River. Reclaim 5 pollution sources (heavy metals) in the Upper Animas River drainage. Develop watershed management plans for all erosion & salinity areas. Approx. cost of this erosion & salinity management would be $375,000.	Manage 65,000 acres in the following watersheds to reduce erosion & sediment yield: Big Gypsum Valley Disappointment Valley Dry Creek Basin Paradox Valley Develop watershed management plans for all erosion & salinity areas. Manage 46,000 acres in Disappointment Valley to reduce salinity & erosion in the Colorado River. Reclaim 5 pollution sources (heavy metals) in the Upper Animas River drainage. Approx. cost of this erosion & salinity management is $450,000.
Fire	Provide level of protection from wildfire that will result in least total cost & will generally enhance soils & water values. Use prescribed fire when possible to enhance soil or water conditions.				
Access	Provide administrative access to public land for management of the soil & water resources. Provide maintenance to roads or trails to reduce erosion.				

Management Guidance for Area L: Emphasis on Areas of Critical Environmental Concern (ACECs)

Management direction will emphasize the areas of public land where special management attention is required. This management should be completed without unnecessarily or unreasonably restricting public land users from purposes that are compatible with such protection.

The proposed Anasazi Culture Multiple Use Area ACEC contains important cultural, mineral, recreation, range, and wildlife resources. The area represents the focus of the northern Anasazi development, with more than 100 sites per square mile in many areas, which represents the highest known archaeologic site density per acre of any area in the nation. The total number of sites on public lands here is estimated nearly 20,000. Many of them cover 10 acres or more. Large oil and gas and carbon dioxide (CO_2) reserves are also contained within the area. Shell Oil Company has made an important investment in the CO_2 resources, with a project life of more than 30 years. The public land within the ACEC provides forage used by livestock and wildlife. The increased mineral development presents a challenge to BLM to provide high quality habitat for the livestock and wildlife dependent upon public lands. Population growth places increased pressure for recreation pursuits on the public lands. These opportunities need to be provided, while emphasizing the cultural and mineral values.

Management Direction for Other Resource Values

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Cultural	Manage the prehistoric or historic values where appropriate. Provide intensive protection of cultural resources from vandals & pot hunters through increased surveillance & law enforcement. Intensify public education for interpretation & recognition of the sensitivity of the resource. Provide for intensive inventory of the cultural resources to more effectively provide protection. A cultural monitor may be required on all surface-disturbing activities to protect subsurface resources.				Manage the Anasazi Heritage Center. Emphasize cultural management plans on the following areas: Cahone Canyon Cannonball Ruin Cow Mesa Cross Canyon Escalante-Dominguez Ruins East Rock Canyon Hamilton Mesa Lowry Ruin McLean Basin Towers Mockingbird Mesa Painted Hand Petroglyphs Painted Hand Ruin Sand Canyon Squew/Papoose Canyon
Recreation	Manage recreational opportunities according to ACEC guidelines for each area. Establish site-specific visual quality objectives and design guidelines for landscape development projects during activity planning.				Close Cross, Cahone, and Squew/Papoose canyons to ORVs. Provide a semiprimitive recreation experience. Manage Cross, Cahone, and Squaw/Papoose canyons under VRM Class II guidelines. Manage the McElmo Research Natural Area for it's special research value.

Area L (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Wildlife	Manage important or critical habitat for T&E, sensitive, or species of special importance to maintain a viable population level of each species.				Invest wildlife funds for structural improvements and vegetation restoration projects to improve the following high priority riparian habitat: Cross, Cow, Cahone, Hovenweep, and Bridge canyons.
Livestock Management	Manage livestock under low to moderate intensity to use available forage & maintain plant vigor while not degrading any present ACEC values.				Develop AMPs on those 'I' category allotments within ACECs. Consider cultural, mineral, wildlife, and recreation values during development.
Forestry	Manage lands suitable for timber & woodland production to enhance ACEC values & to maintain healthy stand conditions.				
Minerals	Manage mineral development to limit conflict with present ACEC values. When possible, schedule activities so conflicts are minimized & site rehabilitation is addressed within ACEC guidelines. Some mineral development may need to be limited or excluded for proper ACEC management.				Continue present protection & no-surface occupancy for oil & gas on Sand & East Rock canyons; Cannonball, Lowry, & Dominguez-Escalante ruins; McLean Basin Towers, & Painted Hand Petroglyphs. Provide for no-surface occupancy or no leasing for oil & gas on: Cahone, Cross, & Squaw/Papoose canyons & Painted Hand Ruin.
Lands	Disposal of isolated tracts not needed for future public land management & that does not contain important resource values may be accomplished after site-specific reviews on a case-by-case basis. Major utility corridors will be considered on a case-by-case basis. Acquisition, exchange and other lands actions will be allowed only if they are designed to meet the ACEC management objective.				

Area L (continued)

Resource/ Activity	General Guidance	Specific Management Direction: Current Management	Resource Conservation	Resource Utilization	Preferred
Soils and Water	Maintain soil productivity, minimize man-caused erosion, & maintain vegetation condition & plant vigor for watershed protection. Maintain water quality & quantity for resource needs.				
Fire	Use fire management techniques that maintain the ACEC values. Wildfire suppression would generally not occur unless needed to protect ACEC values.				
Access	Provide administrative & public access where needed for ACEC management. Maintenance will be provided on only those roads needed for management purposes.				Limit public access in Mockingbird Mesa; Sand, East Roc, and Squew/ Papoose canyons, to foot or horse only and restrict vehicle access to authorized vehicles only. Acquire administrative access into Sand & Yellowjacket canyons & Cannonball Mesa.

APPENDIX SIX

BEST MANAGEMENT PRACTICES

Range

The following procedures would be followed in constructing all management facilities and for vegetation manipulations:

(1) Specific projects would be assessed individually through environmental assessments to determine whether they would have adverse environmental impacts.

(2) Roads or trails to new construction or project sites would not normally be constructed; rather, using existing roads and trails would be encouraged.

Cultural Resources

Best management practices for addressing cultural resource impacts are based upon the Historic Preservation Act of 1966 and 36 CFR 800. Sites in all project areas are identified and recorded dictated by knowledge of the area's cultural values already identified and those values which have potential for yielding significant information.

Once identified via Class I, II, or III surveys (see Glossary), sites are then evaluated as to their significance via 36 CFR 800. Often, minimal testing (excavation) is needed to make this determination. Consultations with the Colorado State Historic Preservation Officer and the Advisory Council on Historic Preservation are done with projects where significant sites will be affected.

Total evidence is the primary mitigation measure used. Sometimes buried cultural resources exist with no surface indications; to protect them, all surface-disturbing actions have the following stipulations attached: If subsurface cultural resources are encountered during construction, activity near the resource will cease and BLM will be notified immediately. In many cases, area site densities are high enough to warrant a cultural monitor who is present during all surface-disturbing operations in case cultural values are unearthed.

Threatened and Endangered (T&E) Species

No action would be taken by the BLM that could jeopardize the continued existence of any federally listed T&E plant or animal species. An endangered species clearance with the USFWS would be required before any part of the proposal or alternatives would be implemented that could affect an endangered species or its habitat.

In situations where data are insufficient to make an assessment of proposed actions, surveys of potential habitats would be made before a decision is made to take any action that could affect T&E species. Should the BLM determine that there could be an effect on a federally listed species, formal consultation with the USFWS would be initiated.

Wilderness

All wilderness values would be protected on lands under wilderness review or study. Guidelines in the Interim Management Policy (BLM, Revised, July 12, 1983) would be followed for designated WSAs. No impairing projects would be allowed in these areas.

General

All actions would consider the BLM's VRM criteria.

Wildlife escape devices would be installed and maintained in water troughs.

In crucial wildlife habitat (winter ranges, fawning/calving areas, strutting grounds, etc.), construction work on projects would be scheduled during seasons when the animals are not concentrated to avoid or minimize disturbances.

After construction, any disturbed areas would be revegetated with a mixture of grasses, forbs, and shrubs as appropriate for the specific site.

Analysis of cost effectiveness would be done on an AMP basis prior to installing any management facility or land treatment.

Vegetative manipulation projects would be done in irregular patterns creating more edge (more than strip and block manipulation), with islands of vegetation left for cover. Consultation with the CDOW would be completed prior to job layout, design, and construction for wildlife projects that may significantly affect wildlife or their habitat.

Chemical treatment would consist of applying approved chemicals to control target species of plants. Before chemicals are applied, the BLM would comply with the Department of the Interior regulations. All chemical applications would be preceded by an approved Pesticide Use Proposal. All applications of pesticides would be under the supervision of a certified pesticide applicator and would be carried out in compliance with the Colorado pesticide laws.

All land treatment projects on crucial wildlife ranges would be limited in size, where necessary, by the cover requirements of wildlife.

If debris should enter any stream, it shall be removed concurrently with the yarding operations and before removing equipment from the project site. Removing debris shall be accomplished so that natural streambed conditions and stream bank vegetation are not disturbed.

Avoid stream crossings if possible. If not, minimize approach cuts and fills and channel disturbance and maintain stream bank vegetation.

Do not locate stream crossings strictly on a grade basis. When possible, choose a stable site and adjust grade to it.

Deposit excess material in stable locations well above the high water level and never into the stream channel. Do not allow any material, including sidecast soil, stumps, logs, or other material to be deposited into a stream.

Provide appropriate width buffer strips adjacent to perennial and intermittent streams, springs, and wet meadows.

Install water bars on skid trails when logging is finished.

Avoid logging across any stream supporting resident fish or on any stream where a downstream water system might be affected.

Time logging activities to the season in which soil damage can be kept to acceptable limits.

For timber harvest roads, take advantage of natural landing areas (flatter, better drained, open areas) to reduce soil disturbance associated with log landings and temporary work roads.

Vary road grades where possible to reduce concentrated flow in road drainage ditches and to reduce erosion on road surfaces.

Maintain roads immediately after logging and whenever necessary by cleaning ditch lines, blading debris from empty landings, trimming damaged culvert ends, and clearing out culvert openings.

When installing culverts, avoid changes in channel orientation and place culverts to conform to the natural channel gradient. Design culverts for maximum stream flow (e.g., 25-yr discharge).

APPENDIX SEVEN

MONITORING AND EVALUATING

The decisions outlined in the San Juan-San Miguel RMP will be implemented over a period of ten years, depending on available funding and manpower. The effects of implementation will be monitored and evaluated on a periodic basis over the life of the plan. The general purposes of this monitoring and evaluating will be:

1. To determine if an action is fulfilling the purpose and need for which it was designed, or if there is a need for modifying or terminating an action.

2. To discover unanticipated and(or) unpredictable effects.

3. To determine if mitigation measures are working as prescribed.

4. To ensure that decisions are being implemented as scheduled.

5. To provide for continuing comparison of plan benefits versus costs, including social, economic, and environmental benefits.

A specific monitoring plan will be written for the wildlife, watershed, and range programs. This plan will provide a framework for choosing the study methods that will provide the information needed to issue and implement specific management decisions which effect watershed, wildlife, and range. Monitoring efforts will focus on allotments in the "Improve" category. For the range program, methods are available for monitoring vegetative trend, forage, utilization, actual use (livestock numbers and periods of grazing), and climate. The data collected from these studies will be used to evaluate current stocking rates, to schedule pasture moves by livestock, to determine levels of forage competition, to detect changes in plant communities, and to identify patterns of forage use. Some of the methods that could be used include: frequency trend transects, base photo trend plots, key forage plant utilization estimates, aerial and ground reconnaissance of animal numbers and grazing patterns, actual use surveys, and low altitude aerial photography transects.

Priorities for monitoring grazing allotments will be established in this plan. The methodology and intensity of study that is chosen for a particular allotment will be determined by the nature and severity of the resource conflicts that are present in that allotment.

For the wildlife program, monitoring will be directed at the biotic resource components using both temporary and permanent studies. The findings from these studies can be used to monitor responses in habitat condition and trend; monitor forage availability, composition, and vigor; monitor changes in cover and habitat effectiveness; and monitor habitat management objectives.

Some of the methods that are available include: utilization transects, browse condition and trend transects, modified browse canopy coverage transects, woody riparian surveys and photo plots, range site condition ratings, height and weight grazed plant

method, color infrared aerial photography, pellet group transects, fisheries species composition and population surveys, and nongame bird and small mammal plots.

Monitoring for the watershed program will mainly involve monitoring soil erosion, although trends in streambank stability and water quality will be monitored for mining and forestry activities. Some of the methodologies that can be used are the point frame method, the sediment trap method, the particle transport method, and channel geometry.

Specific monitoring plans for other programs will be developed if the need arises.

The data collected from the monitoring and evaluating process will be analyzed and considered in the decision making process. This will provide information regarding the effects of the land use decisions, the adequacy of mitigation methods, etc. If monitoring indicates that significant unexpected adverse impacts are occurring or that mitigating measures are not working as predicted, it may be necessary to amend or revise the RMP. If implementation and mitigating efforts are highly successful, monitoring and evaluating efforts may be reduced.

APPENDIX EIGHT. ECONOMICS.

Table 8-1. Ranch Revenue within Planning Area in 1983 Dollars. 1/

Ranch data	Number of cattle				Number of sheep		Both cattle and sheep 2/	Both cattle and sheep 3/
	<249	250-549	550-749	>750	<1,249	>1,250	<750	>750
Livestock revenue	$36,362	$95,674	$231,089	$417,204	$77,975	$206,444	$70,622	$438,886
Crop revenue	0	0	0	2,403	0	0	19,562	0
Total gross revenue	$36,362	$95,674	$231,089	$419,607	$77,975	$206,444	$90,184	$438,886
Operating expenses	31,961	73,439	164,946	345,745	62,777	154,625	63,137	324,559
Forest Service fees	798	4,058	4,386	4,009	1,254	3,520	979	3,946
BLM fees	86	777	2,706	3,598	1,704	2,231	1,117	9,053
Total operating costs	32,845	78,274	172,038	353,352	65,735	160,376	65,233	337,558
Livestock depreciation	1,227	2,474	2,738	4,671	4,522	13,993	2,983	20,767
Machinery depreciation	12,139	19,585	25,703	38,897	6,804	13,669	13,270	20,457
Improvements depreciation	2,476	4,118	5,891	10,566	2,628	6,834	11,080	28,088
Total depreciation costs	15,842	26,177	34,332	54,134	13,954	34,496	27,333	69,312
Family labor	19,144	12,731	27,089	13,687	12,731	14,358	16,751	19,144
Operator labor	17,684	29,532	14,678	20,160	17,684	17,684	17,684	17,684
Total owner labor	36,828	42,263	41,767	33,847	30,415	32,042	34,435	36,828
Net revenue	-49,193	-51,041	-7,434	-21,727	-32,129	-20,471	-36,817	-4,813

Table 8-1. (Continued)

Ranch data	Number of cattle				Number of sheep		Both cattle and sheep[2/]	Both cattle and sheep[3/]
	≤249	250-549	550-749	≥750	≤1,249	≥1,250	≤750	≥750
Number of ranches[4/]	111	35	6	5	2	4	4	3
Dependency on BLM lands								
Low	65	8	3	1	2	0	4	0
Medium	30	14	0	0	0	2	0	2
High	16	13	3	4	0	2	0	1

1/ Revenue data adjusted to 1983 dollars from Bartlett et al., 1979.
2/ This figure represents ranches where there are ≤219 cattle or ≤999 sheep, with a combined figure of ≤750.
3/ This figure represents ranches where there are ≥220 cattle or 71,000 sheep, with a combined figure of 7,750.
4/ Stanger and Tohill, personal commun., 1983.
Note: This presents typical ranch economic data within the planning area.
Sources: BLM Data 1984 and CSU (Dept. of Range Science) August 1979.

Table 8-2. Change in Ranch Revenue By Alternative in 1983 Dollars.

Resource Conservation	Number of ranches	Change AUMs (total)	Change AUMs (average)	Change gross revenue		Change net revenue	
				Total	Average	Total	Average
Estimated capacity							
Reductions	97	-15,045	-155	-593,825	-6,121	3,061,206	31,559
Increases	51	4,091	80	161,471	3,166	-832,396	-16,321
Net	148	-10,954	-75	-432,354	-2,955	2,228,810	15,238
Potential capacity							
Reductions	90	-14,073	-156	-555,461	-6,172	2,863,433	31,815
Increases	69	8,532	124	336,758	4,880	-1,736,006	-25,160
Net	159	-5,541	2	-218,703	-1,292	1,127,427	6,655

Current Management	Number of ranches	Change AUMs (total)	Change AUMs (average)	Change gross revenue		Change net revenue	
				Total	Average	Total	Average
Estimated capacity							
Reductions	0	0	0	0	0	0	0
Increases	0	0	0	0	0	0	0
Net	0	0	0	0	0	0	0
Potential capacity							
Reductions	0	0	0	0	0	0	0
Increases	11	8,900	809	351,283	31,935	-1,810,883	-164,625
Net	11	8,900	809	351,283	31,935	-1,810,883	-164,625

Table 8-2. (Continued)

Resource Utilization	Number of ranches	Change AUMs (total)	Change AUMs (average)	Change gross revenue		Change net revenue	
				Total	Average	Total	Average
Estimated capacity							
Reductions	88	-14,486	-165	-571,762	-6,497	2,947,466	33,493
Increases	83	11,674	141	460,772	5,551	-2,375,309	-28,618
Net	171	-2,812	-24	-110,990	-946	572,157	4,875
Potential capacity							
Reductions	69	-3,063	-44	-120,897	-1,752	623,229	9,032
Increases	125	42,800	342	1,689,316	13,515	-8,708,516	-69,668
Net	194	39,737	298	1,568,419	11,763	-8,085,287	-60,636

Preferred	Number of ranches	Change AUMs (total)	Change AUMs (average)	Change gross revenue		Change net revenue	
				Total	Average	Total	Average
Estimated capacity							
Reductions	87	-14,598	-168	-576,183	-6,623	2,970,255	34,141
Increases	82	6,009	73	237,175	2,892	-1,222,651	-14,910
Net	169	8,589	-95	-339,008	-3,731	1,747,604	19,231
Potential capacity							
Reductions	70	-4,557	-65	-179,864	-2,569	927,213	13,246
Increases	114	27,381	240	1,080,728	9,480	-5,571,212	-48,870
Net	184	22,824	175	900,864	6,911	-4,643,999	-35,625

BLM Data 1984.

SOCIOECONOMICS

Socioeconomic impacts are assessed in this RMP relative to a hypothetical baseline that projects current socioeconomic trends to the year 2000. Changes in the four economic indicators used are expressed in units of persons (population and employment), 1983 dollars (per capita income), and thousands of 1983 dollars (total personal income).

Table 8-3 presents the baseline projections used in Chapter Three. Population, employment, per capita income, and total personal income are shown for the year 1994 (considered the short term), and for the year 2000 (the long term).

Methodological Overview

Economic projections were made using the planning and assessment system created by Mountain West, Inc., and maintained and operated by the State of Colorado, Department of Natural Resources. Making projections with this model requires converting activities planned in each RMP alternative into basic jobs created by each activity and the income produced by each job.

Table 8-4 lists the assumptions used for each activity by alternatives. A discussion follows listing the equations used in arriving at basic jobs and income per job for each activity used in the model. Model output is detailed by both county and planning area. The output of several runs is consolidated into Chapter Three, Environmental Consequences.

Table 8-3. Economic Baseline Projections.

Year	Population		Employment		Per capita income (1983 dollars)		Total personal income (thousands of 1983 dollars)	
	1994	2000	1994	2000	1994	2000	1994	2000
Archuleta	6360	7285	2,960	3,352	10,925	10,802	69,492	78,698
Dolores	2034	2189	861	948	8,394	8,644	17,075	18,930
San Juan	1353	1425	476	525	7,467	7,612	10,108	10,851
San Miguel	3785	4362	1,906	2,279	9,306	9,612	35,229	41,931
Montezuma	19,637	22,200	9,626	10,821	10,992	10,882	215,871	241,599
Montrose	31,646	37,265	15,028	17,770	9,835	9,819	311,265	365,923
La Plata	43,096	47,039	22,318	23,959	10,597	10,408	456,702	489,603
Total	107,913	121,768	53,178	59,657	10,339	10,245	1,115,744	1,247,538

Source: BLM Data 1984.

Table 8-4. Assumptions Used in Socioeconomics.

Numbers	Assumptions by alternative			
	Current management	Resource conservation	Resource utilization	Preferred
Change in wildlife numbers*				
Deer	-1,100	0	+4,000	0
Elk	- 890	0	+1,400	0
Additional AUMs*	+8,900	+8,100	+45,000	+32,000
Oil & gas production values on BLM lands* ($ million)	$10.5	$6.7	$14.5	$8.2
Oil & gas production percent change per alternative*	20	0	100	50
Percent change in fishermen numbers RVDs*	0	23	45	17
Increase in tourist expenditures ($ million)*	$5	$7.5	$10	$7.5

* Estimates made by BLM specialists.

Note: Coal resources will not be further developed within the timeframe of the RMP.

Source: BLM Data 1984.

Equations

Hunting

1. Hunters = 0.2582 # deer + 386.15 R2 = 0.939

2. Hunters = 1.2292 # elk - 187.96 R^2 = 0.95

3. Basic employment per 1,000 hunters = 5.3 jobs

4. Income per basis hunter-related job = $10,676 (in 1983 dollars)

Grazing

1. Animal numbers = AUMs/12

2. Grazing-related jobs = Animal numbers/100

3. Income per grazing-related job = $6,582 (in 1983 dollars)

Fishing

1. Fishing-related jobs = (460 base; percent change per alternative)

2. Income per fishing-related job = $10,676 (in 1983 dollars)

Tourism

1. Tourist-related jobs = Tourist expenditures/$29,000 (in 1980 dollars)

2. Income per tourist-related job = $13,478 (in 1983 dollars)

Oil & Gas

1. Oil & gas-related jobs = (113 base; percent change per alternative)

2. Income per oil & gas-related job = $31,191 (in 1983 dollars)

RANGE APPENDICES

APPENDIX NINE-A

ALLOTMENT CATEGORIZATION

Specific criteria were developed to evaluate the management situation for each allotment and single out those allotments that will require a change in present grazing management to resolve conflicts in resource uses. The present condition of the resource, its potential to respond to management changes, the current management situation, and the socioeconomic feasibility of changing grazing management were all used as criteria. These are based on current BLM policy, which can be found in Washington Office Instruction Memorandum 82-292. Each criterion was rated independently by a cross section of resource specialists familiar with the allotment. Each specialist recommended placement of the allotment into one of three management categories. Finally, the ratings and recommendations were reviewed by the area managers who made a tentative decision on how the allotment would be categorized. Appendix 9-H places each allotment into one of the three management categories and describes livestock use in each allotment. The management category for an allotment may be changed after the RMP/EIS is completed in 1984 or may be changed when resource conditions change or new data become available.

Allotments Where Change is Not Needed--Maintain (M)

These allotments are best described as follows: vegetation and watershed conditions are satisfactory; the allotment has the potential for high resource production and is producing close to its potential; there are no serious resource use conflicts; and(or) the allotment's size and physical characteristics would warrant investment of public funds for range improvements and(or) supervision.

Allotments Where Change is Needed--Improve (I)

These allotments are best described as follows: vegetation and(or) watershed conditions are not satisfactory; the allotment's potential production is high to moderate, but it is producing below its potential; there are substantive conflicts with other resource uses; and(or) the allotment's size, physical characteristics, and the anticipated benefits from mangement changes warrant investing public funds for range improvements and(or) supervision.

Allotments Where Change is Not Feasible--Custodial (C)

These allotments are best described as follows: little, if any, conflict exists in resource use; overall, resource values are relatively low; the biological potential for response to different management is low; the size or potential productivity of the allotment does not warrant the expenditure of funds for supervision; and(or) the cost of range improvements needed to change grazing management exceeds the expected benefits.

APPENDIX NINE-B

TYPICAL RANGE DEVELOPMENTS

Following is a discussion of typical design features and construction practices for range improvements and treatments proposed in this plan. There are many special design features that are not specifically discussed in this appendix; they will be developed, if needed, for individual projects at the time an environmental assessment is written.

Structural Improvements

Fences

All fences would be built to BLM manual specifications. Normally fences would be constructed to provide exterior allotment boundaries, divide allotments into pastures, protect streams, and control livestock. Most fences would be three-wire or four-wire with steel posts spaced 16 1/2' apart with intermediate wire stays. Existing fences that create wildlife movement problems would be modified. Proposed fence lines would usually not be bladed or scraped. Gates or cattleguards would be installed where fences cross existing roads.

Spring Development

Springs would be developed or redeveloped using a backhoe or hand labor to install a buried collection system, usually consisting of drain tile and a collection box. A short pipeline would be installed to deliver water to a trough for use by livestock and wildlife. The spring area could be fenced to exclude livestock following development.

Pipelines

Wherever possible, water pipelines would be buried. The trench would be excavated by a backhoe, ditchwitch, or similar equipment. Rigid plastic pipe would be placed in the trench and the excavated material would be used to backfill. Most pipelines would have water tanks spaced approximately 1/2 mile apart.

Stock Ponds

Stock pond sites would be selected based on available watershed and hydrologic information. All applicable State laws and regulations would be followed.

Wells

Well sites would be selected based on geologic reports that predict the depth to reliable aquifers. All applicable State laws and regulations that apply to ground water would be observed.

Nonstructural Improvements

Burning

Burning is proposed to reduce the amount of undesirable plant species on a site. Burning would normally be done during April-May or September-October, depending on the specific prescription written for each area, desired results, weather, and moisture conditions. Burn plans would be developed for each burn.

Plowing and Seeding, Chaining and Roller Chopping

Most of the sites to be treated are in poor or fair vegetation condition and have a low potential to improve under other management practices. Most of the existing vegetation would be eliminated during seedbed preparation, and the site would be seeded with species adapted to the site. The final selection of species to be seeded would depend on the planned use of the site and the management objectives for the allotment. Seed would be drilled wherever possible. The application of mulch and(or) fertilizer would be prescribed based on site characteristics.

Interseeding

The treatment differs from plowing and seeding in that the existing vegetation is not eliminated during seedbed preparation. Desirable plant species would be interseeded with existing vegetation. A seed dribbler used with a crawler tractor, small scalper/seeder, or range drill would be used to interseed strips. Broadcast seedings could possibly be used as well. Species to be seeded would be selected to meet management objectives developed for the allotment.

APPENDIX NINE-C

POSSIBLE GRAZING SYSTEMS

Deferred Rotation Grazing

Deferred rotation is discontinuing grazing on different parts of an allotment in succeeding years, which allows each pasture to rest successively during the growing season to permit seed production, establishment of seedlings, and restoration of plant vigor (Society for Range Management 1974). One or more pastures are grazed during the spring, while the remaining one or more pastures are rested until after seed ripening of key species, and then grazed. Deferred rotation grazing differs from rest-rotation grazing in that no yeariong rest is provided.

Rest-Rotation Grazing

Under a rest-rotation grazing system, grazing is deferred on various parts of an allotment during succeeding years, and the deferred parts are allowed complete rest for one or more years (Society for Range Management 1974). The allotment is divided into pastures, usually with comparable grazing capacities. Each pasture is systematically grazed and rested so that livestock production and other resource values are provided for, while the vegetation cover is simultaneously maintained or improved. This practice provides greater protection of the soil resource against wind and water erosion (USDA, FS 1965; Hormay 1970, USDA, FS 1972; Ratliff and Reppert 1974).

Any of several rest-rotation grazing systems may be used, depending upon the objectives for the allotment and the number of pastures.

Deferred Grazing

Deferred grazing is the discontinuance of grazing by livestock on an area for a specified period of time during the growing season. Under this system, grazing would begin after key plants have reached an advanced stage of development in their annual growth cycle. The growing season rest provided by this system promotes plant reproduction, establishment of new plants, or restoration of the vigor of old plants (American Society of Range Management 1964).

Alternate Grazing

Alternate grazing is grazing by livestock every other season, with the area being rested in the alternate year. Stoddard et al. (1975) describe the system:

> Rotation grazing, or alternate grazing, involves subdividing the range into units and grazing one range unit, then another, in regular succession. The rotation system of grazing is based upon the assumption that animals in large numbers make more uniform use of the forage, and that a rest from grazing is beneficial to the plant, even though it must support a greater number of animals in the shorter time during which it is grazed. Certainly, proper rotation grazing results in more uniform utilization. Large number of animals in small units are forced to spread over the entire area and to use the available forage more uniformly. Trampling is reduced because animals are held on small areas where feed is more abundant, and hence less travel is necessary.

APPENDIX NINE-D

"I" CATEGORY ALLOTMENTS--PROBLEMS AND MANAGEMENT ACTIONS

Introduction

Appendix 9-D depicts allotment specific problems and management objectives for all "I" category allotments. Multiple use constraints have been applied. Economic analyses will be completed on all allotments that require investing public funds to implement needed improvements. Further refining management actions will be completed as consultation with permittees and management plan development occur.

Table 9-D-1. Specific Problems and Management Actions for I Allotments.

Allot. no.	Name	Resource problems/ conflicts-- management actions*	Allot. no.	Name	Resource problems/ conflicts-- management actions*
7001	Mailbox Park	1	7081	Swain	1
7002	Gypsum Gap	1, 2	7082	Nyswanger	1
7005	Salt Arroyo	1, 2, 3	7086	Horse Bench	1
7006	Gyp Ridge	1, 2	7101	E. Paradox Common	1, 2
7008	Twenty-five Mesa	1	7201	Lillylands	1, 2
7010	Wickson Draw	1, 3	7203	Naturita Canyon	1, 4
7014	Mesa Creek	1	7205	Leopard Creek	1, 4
7016	Dry Creek Basin	1, 2, 3	7206	McKee Draw	1, 2
7018	Maverick Draw	1, 2	7207	Big Bear Creek	1, 4
7022	Burn Canyon	1	7222	Coventry	1, 4
7023	Sharp Canyon	1, 4	7300	Dry Park	1, 2
7025	Island Mesa	1	7303	Barkelew Draw	1
7027	Coke Ovens	1, 3	8002	Squaw Canyon	1
7028	Warden Draw	1, 2, 5	8003	Big Canyon	1
7031	Tabeguache	1	8004	Dolores River	1, 4, 6
7032	Sawtooth	1	8007	Cross Canyon	1, 4, 5, 7
7034	Slick Rock	1	8009	Hovenweep Canyon	1, 4
7035	Naturita Ridge	1, 3	8011	Lower McElmo	1, 4
7036	Disappointment	1, 2, 3, 6	8013	Individual	1, 4, 8
7037	Davis Mesa	1	8018	Yellowjacket	1, 4
7039	Ute Ranch	1	8019	Cannonball	1, 4
7041	Young DOW	1, 2	8020	Burro Point	1, 7, 8
7042	Dobie Canyon	1	8033	Veach	1
7045	Horse Park	1, 2, 3	8035	Hamilton Mesa	1
7046	Indian Valley	1, 2	8057	Yellowjacket Canyon	1, 4
7048	Wray Mesa	1	8066	Flodine Park	1
7076	Houser	1, 2			

* Refer to Table 9-D-2 for explanation of numbers

Source: BLM Data 1984.

Table 9-D-2. Specific Problems and Management Actions for I Allotments (explanation of Table 9-D-1).

Resource problem/conflict	Management actions
1. Lack of management facilities to improve condition and achieve forage potential.	Implement AMPs/update existing AMPs. Install range improvements such as fences, cattleguards, water developments, and land treatments.
2. Big game winter range values--competition for forage.	Provide land treatments to increase forage. Modify numbers and season of use of livestock. Develop grazing systems. Encourage cooperative range improvements with the CDOW.
3. Wild horse use areas--competition for forage.	Develop Horse Management Plans. Complete vegetation treatments to increase forage. Develop waters to improve distribution. Provide fencing where private land conflicts exist.
4. Riparian/aquatic habitat needing improvements.	Develop grazing systems. Restrict season of use. Limit forage utilization levels to promote riparian/aquatic resources. Fence streams where necessary to protect and promote resources.
5. Wilderness study areas (WSAs) limiting range improvements.	Provide range improvements that are compatible with WSA guidelines.
6. Recreation use conflicts.	Limit use levels and season of use to minimize conflicts. Provide fences, waters, and other facilities to distribute livestock away from recreation use areas.
7. Cultural conflicts.	Fence specific archaeologic sites as necessary. Continue to perform site-specific clearance on range improvements projects.
8. Oil and gas exploration and facilities conflicts.	Provide rest from grazing to allow the establishment of vegetation in rehabilitated areas. Install cattleguards and fences as needed to control livestock movement.

Source: BLM Data 1984.

Table 9-D-3. General Problems, Opportunities and Actions for Grazing Management.

Current situation	Possible management actions
Present levels of livestock use may exceed the carrying capacity of an allotment.	Monitor actual livestock use and resulting levels of utilization to determine the proper carrying capacity.
Livestock use may be poorly distributed within an allotment or pasture, which can result in heavy utilization of some sites while others may receive little or no grazing use.	Develop sources of water to distribute livestock more evenly.
	Construct fences to alter traditional grazing patterns.
	Specify placement of salt and mineral supplements.
	Require herding of livestock.
Grazing season and selective grazing habits of different kinds of livestock can reduce the quality and quantity of vegetation produced by plant communities.	Change the season of use and(or) the class or kind of livestock.
	Implement rotational or deferred grazing systems that will provide for plant maintenance requirements.
Some sites may be producing a quality and quantity of forage well below their potential and have a low potential to respond to changes in grazing management alone.	Increase productivity of these sites through mechanical treatment and(or) seeding with native species or well-adapted introduced species.
Investments in range improvements needed to implement changes in grazing management may not have favorable benefit/cost ratios.	Encourage contributions from range users and other parties benefiting from changed grazing management.
	Design grazing management systems that require a minimum investment in range improvements but will meet the stated objectives.

Source: BLM Data 1984.

APPENDIX NINE-E

AUMs BY ALTERNATIVE BY ALLOTMENT

Introduction

Table 9-E displays AUMs by alternative by allotment; the following assumptions were made in developing these figures:

1. Under the Resource Conservation, Resource Utilization, and Preferred alternatives, the figures should reflect the suggested carrying capacity plus additional AUMs that would be gained through instituting effective grazing management practices and vegetation manipulations.

2. The figures shown under the Current Management Alternative (No Action Alternative) correspond to current active preference and a 3-year average of actual use.

3. Adequate funding and manpower would be available to implement each alternative.

4. Implementing all facilities and vegetation manipulations would be accomplished in the term of the plan.

Table 9-E. Carrying Capacity and Management Status (by Allotment by Alternative).

			Resource Conservation			Resource Utilization			Current Management (no action)			Preferred		
Allot. no.	Allotment name	Mgmt. status	Potential capacity (AUMs)	AMPs	Present estimated capacity (AUMs)	Potential capacity (AUMs)	AMPs	Present estimated capacity (AUMs)	Current active preference (AUMs)	AMPs	Actual use (AUMs) 1/	Potential capacity (AUMs)	AMPs	Present estimated capacity (AUMs)
7000	Upper Disappointment	M	303		303	303	@	303	303		303	303	@	303
7001	Mailbox Park	I	259	@	59	719	@	59	194		0	459	@	59
7002	Gypsum Gap	I	0		0	358	@	158	546		369	358	@	158
7003	Lee Lands	C	57		57	57		57	104		104	57		57
7004	Dolores Canyon	M	244	@	146	260	@	162	162	@	146	260	@	162
7005	Salt Arroyo	I	58	@	58	158	@	58	248		248	158	@	58
7006	Gyp Ridge	I	150	@	0	266	@	86	383		383	266	@	86
7007	Uncompahgre Bench	M	635	@	560	949	@	628	560	@	577	881	@	560
7008	Twenty-five Mesa	I	424	@	124	516	@	124	329		325	399	@	124
7009	East Summit Mesa	C	3		3	3		3	28		27	3		3
7010	Wickson Draw	I	206	@	81	377	@	81	335		200	256	@	81
7011	Ayers Individual	M	64		64	123	@	123	64		64	64	@	64
7012	Lion Canyon	C	14		14	14		14	14		0	14		14
7013	San Miguel River	C	14		14	27		27	20		14	27		27
7014	Mesa Creek	I	1,609	@	1,234	6,491	@	1,234	1,900		1,709	3,984	@	1,234
7015	Bush Canyon	M	153		153	323	@	153	153		119	153	@	153
7016	Dry Creek Basin	I	4,692	@	3,892	17,098	@	6,498	10,575	@	8,538	15,998	@	5,998
7017	McKenna Peak	M	206		206	373	@	208	208		206	228	@	208
7018	Maverick Draw	I	107	@	57	236	@	57	73		70	107	@	57
7019	Summit Point	C	38		38	50		50	50		38	50		50
7020	Roc Creek	C	24		24	28		28	28		26	28		28
7021	Rawlings Individual	C	1		1	1		1	18		16	1		1
7022	Burn Canyon	I	354	@	81	312	@	81	481		0	256	@	81
7023	Sharp Canyon	I	4	@	4	4	@	4	30		30	4		4
7024	Lillylands-West	M	189		189	324	@	224	224		189	224	@	224
7025	Island Mesa	I	458	@	408	908	@	408	1,910		1,910	908	@	408
7026	La Sal Creek	C	2		2	2		2	45		45	2		2
7027	Coke Ovens	I	0		0	372	@	22	224		224	272	@	22
7028	Warden Draw	I	528	@	478	728	@	478	770		506	553	@	478
7029	Lone Mesa	M	55		55	149	@	149	148		55	148	@	148
7031	Tabeguache Creek	I	719	@	319	2,255	@	319	620		620	1,419	@	319
7032	Sawtooth	I	854	@	354	2,463	@	723	418		354	2,023	@	723
7033	Buckeye	M	48		48	48	@	48	48		48	48		48
7034	Slick Rock	I	1,150	@	1,075	2,669	@	1,269	1,269		959	1,769	@	1,269
7035	Naturita Ridge	I	132	@	32	1,169	@	451	960	@	432	651	@	451
7036	Disappointment	I	3,190	@	2,790	4,290	@	2,790	4,858	@	3,865	4,290	@	2,790
7037	Davis Mesa	I	120	@	105	120	@	105	250		188	120	@	105
7038	Spud Patch	M	756		756	2,364	@	1,464	1,174		756	1,174	@	1,174
7039	Ute Ranch	I	1,126	@	1,366	2,366	@	1,366	2,273	@	1,855	1,866	@	1,366
7040	Pinion	C	8		8	21		21	8		7	21		21
7041	Young-DOW	I	1,292	@	392	1,441	@	541	unallotted		unallotted	1,441	@	541
7042	Doble Canyon Individual	I	247	@	1	247	@	1	12		3	247	@	1
7043	South Mountain	C	72		72	72		72	231		233	72		72
7044	Lion Creek Basin	M	350		350	854	@	500	350		397	704	@	350

Table 9-E. (Continued)

Allot. no.	Allotment name	Mgmt. status	Resource Conservation: Potential capacity (AUMs)	AMPs	Resource Conservation: Present estimated capacity (AUMs)	Resource Utilization: Potential capacity (AUMs)	AMPs	Resource Utilization: Present estimated capacity (AUMs)	Current Management (no action): Current active preference (AUMs)	AMPs	Current Management (no action): Actual use (AUMs) 1/	Preferred: Potential capacity (AUMs)	AMPs	Preferred: Present estimated capacity (AUMs)
7045	Horse Park	I	75	@	0	929	@	129	300		117	929	@	129
7046	Indian Valley	I	1,126	@	926	2,666	@	1,066	1,629		1,026	2,566	@	966
7047	Home Bench	C	30		30	30		30	48		48	30		30
7048	Wray Mesa	I	1,802	@	802	5,973	@	1,061	802		802	2,561	@	1,061
7049	Desert Claim	C	151		151	151		151	200		151	151		151
7050	Plateau	C	272		272	272		272	272		272	272		272
7051	Belmear Mountain	C	18		18	18		18	73		58	18		18
7052	Ryman Creek	C	3		3	4		4	66		60	4		4
7075	Lavender Exchange of Use	C	unallotted		0	6		6	0		53 2/	6		6
7076	Houser	M	104	@	104	109	@	109	164		104	109	@	109
7077	First Park	C	unallotted		0	11		11	unallotted		20 3/	unallotted		0
7078	Feedlot	C	3		3	3		3	13		13	3		3
7079	River	C	21		21	22		22	22		25	22		22
7080	Rowher Canyon	C	unallotted		0	1		1	30		29	1		1
7081	Swain Bench	I	224	@	15	224	@	15	23		21	125	@	15
7085	Pocket Individual	C	1		1	1		1	33		0	1		1
7086	Horse Bench	C	42		0	42	@	0	12		0	42		0
7087	Colombo	C	unallotted		0	3		3	3		2	3		3
7088	Sundown	C	3		3	3		3	3		3	3		3
7100	Carpenter Ridge Common	M	216		216	465	@	265	265		216	415	@	265
7101	East Paradox Common	I	903	@	603	1,381	@	603	1,080	@	1,080	992	@	603
7102	Sunrise Gulch Common	C	44		44	44		44	63		63	44		44
7103	Third Park Common	M	222		222	623	@	423	277		222	427	@	277
7104	Spencer Lake	C	96		96	96		96	135		103	96		96
7105	Second Park	C	27		27	27		27	40		40	27		27
7016	Tuttle Draw	C	6		6	6		6	39		39	6		6
7107	Coal Canyon	M	55		55	228	@	128	60		55	160	@	60
7200	River	C	64		64	64		64	117		110	64		64
7201	Lillylands	I	576	@	406	752	@	426	1,419		673	606	@	426
7202	Upper Maverick Draw	C	3		3	3		3	75		0	3		3
7203	Naturita Canyon	C	18	@	18	28	@	28	28		18	28		28
7204	Beaver Rim	C	3		3	3		3	6		6	3		3
7205	Leopard Creek	C	3	@	3	3	@	3	12		8	3		3
7206	McKee Draw	I	100	@	25	304	@	84	84		25	209	@	84
7207	Big Bear Creek	C	23	@	23	23	@	23	80		85	23		23
7208	Upper Mail Box	M	176		176	176	@	176	176		92	176		176
7209	Hamilton Mesa	C	23		23	26		26	26		0	26		26
7210	Little Maverick Draw	M	40		40	40	@	40	40		40	40	@	40
7211	Beaver Canyon	C	5		5	5		5	50		50	5		5
7212	Unallotted	C	unallotted		0	unallotted		0	unallotted		unallotted	unallotted		0
7213	Unallotted	C	unallotted		0	50		50	unallotted		unallotted	50		50
7214	Rincone	C	10		10	10		10	10		10	10		10
7215	Cone	M	38		38	86	@	86	40		38	40	@	40
7216	San Miguel Rim	M	48		48	72	@	72	72		48	72		72

Table 9-E. (Continued)

Allot. no.	Allotment name	Mgmt. status	Resource Conservation: Potential capacity (AUMs)	Resource Conservation: AMPs	Resource Conservation: Present estimated capacity (AUMs)	Resource Utilization: Potential capacity (AUMs)	Resource Utilization: AMPs	Resource Utilization: Present estimated capacity (AUMs)	Current Management (no action): Current active preference (AUMs)	Current Management (no action): AMPs	Current Management (no action): Actual use (AUMs) 1/	Preferred: Potential capacity (AUMs)	Preferred: AMPs	Preferred: Present estimated capacity (AUMs)
7217	Sawpit Individual	C	17		17	36		36	22		17	36		36
7218	Norwood Hill	C	4		4	4		4	9		9	4		4
7219	Bollinger Ditch	C	8		8	14		14	8		8	14		14
7220	Williams Ditch	C	3		3	5		5	5		5	5		5
7221	Duroy	C	60		60	60		60	90		71	60		60
7222	Coventry	I	35	@	35	35	@	35	70		17	35	@	35
7223	Little Baldy	M	170		170	232	@	232	175		170	175	@	175
7224	High Mesa	M	87		87	116	@	116	87		87	87		87
7225	Oak Hill	C	5		5	8		8	5		6	8		8
7226	Summer Camp Creek	C	5		5	5		5	35		36	5		5
7227	Redvale	C	11		11	11		11	20		20	11		11
7251	Sawdust Gulch	C	59		59	59		59	59		27	59		59
7252	Buck Canyon	C	1		1	1		1	1		1	1		1
7253	Alder Creek	C	24		24	24		24	24		18	24		24
7300	Dry Park	I	405	@	230	606	@	230	746	@	657	505	@	230
7301	Horsefly Common	M	50		50	50	@	50	50		46	50		50
7302	Uncompahgre Common	M	58		58	58	@	58	58		58	58		58
7303	Barkelew Draw Common	I	424	@	224	562	@	224	562		471	484	@	224
7305	Beaver Mesa	M	38		38	101	@	101	41		38	41		41
7306	Unallotted	C	unallotted		0	unallotted		0	unallotted		unallotted	unallotted		0
8000	Unallotted	C	unallotted		0	unallotted		0	unallotted		unallotted	unallotted		0
8002	Squaw Canyon	I	162	@	162	212	@	162	230		230	212	@	162
8003	Big Canyon	I	214	@	164	877	@	277	164		164	677	@	277
8004	Dolores River	I	393	@	343	393	@	343	1,134		448	393	@	343
8005	Sheep Point AMP	M	595	@	595	868	@	868	595	@	298	595	@	595
8006	Todd Individual	C	23		23	53		53	24		23	53		53
8007	Cross Canyon	I	1,073	@	973	1,773	@	973	1,743		1,697	1,783	@	973
8008	Ruin Canyon	M	21		21	115	@	45	22		21	32		22
8009	Hovenweep Canyon	I	287	@	227	288	@	228	227		227	288	@	228
8010	Dry Canyon	C	21		21	26		26	26		26	26		26
8011	Lower McElmo	I	460	@	460	1,041	@	460	821		820	510	@	460
8012	Cahone Mesa AMP	M	1,098	@	1,098	1,969	@	1,734	1,734	@	739	1,969	@	1,734
8013	Individual	I	1,068	@	1,068	1,568	@	1,068	2,206		2,206	1,568	@	1,068
8014	Alkali	C	53		53	67	@	67	53		52	53		53
8015	Dolores	C	27		27	31		31	31		30	31		31
8016	McCabe	C	2		2	2		2	8		8	2		2
8017	Weber Canyon	C	2		2	5		5	5		5	5		5
8018	Yellowjacket	I	183	@	183	553	@	183	1,076		705	553	@	183
8019	Cannonball	I	104	@	104	179	@	104	262		262	179	@	104
8020	Burro Point AMP	I	1,197	@	997	1,283	@	1,083	1,083	@	478	1,283	@	1,083
8021	Rock Creek	M	43		43	165	@	165	43		43	43		43
8022	Sand Canyon	C	4		4	4		4	24		24	4		4
8023	Sand Canyon	C	65		65	65		65	96		43	65		65

Table 9-E. (Continued)

Allot. no.	Allotment name	Mgmt. status	Resource Conservation: Potential capacity (AUMs)	AMPs	Resource Conservation: Present estimated capacity (AUMs)	Resource Utilization: Potential capacity (AUMs)	AMPs	Resource Utilization: Present estimated capacity (AUMs)	Current Management (no action): Current active preference (AUMs)	AMPs	Current Management (no action): Actual use (AUMs) 1/	Preferred: Potential capacity (AUMs)	AMPs	Preferred: Present estimated capacity (AUMs)
8024	Trail Canyon	M	162		162	162	@	162	162		162	162	@	162
8025	Aztec Canyon	M	102		102	102	@	102	102		102	102	@	102
8026	Mathias	C	7		7	19		19	7		7	19		19
8027	Gawith	C	17		17	17		17	60		60	17		17
8028	Mud Creek	C	66		66	66		66	135		135	66		66
8029	Hurst	C	14		14	14		14	35		35	14		14
8030	Bement	C	15		15	15		15	48		48	15		15
8031	Noland	C	8		8	8		8	20		20	8		8
8032	N. Menefee Mountain	C	10		10	16		16	10		10	16		16
8033	Veach	I	121	@	121	433	@	133	488		435	433	@	133
8034	Willow Creek	C	55		55	55		55	84		84	55		55
8035	Hamilton Mesa	I	232	@	232	532	@	232	1,100		428	532	@	232
8036	Schuster	C	7		7	7		7	23		23	7		7
8037	Ute Mountain	C	9		9	9		9	16		16	9		9
8038	Monument	C	21		21	21		21	30		30	21		21
8039	Lower Aztec Canyon	M	7		7	9	@	9	7		7	7		7
8040	Unallotted	M	unallotted		0	51	@	51	unallotted		unallotted	50		50
8041	Burro Individual	M	11		11	14	@	14	11		11	11		11
8042	Mancos River	M	84		84	85	@	85	85		84	85		85
8043	West Weber Mountain	C	50		50	89		89	50		50	89		89
8044	Weber Mountain	C	6		6	6		6	100		0	6		6
8045	Doerfer	C	27		27	44		44	35		27	44		44
8046	East Canyon	C	48		48	48		48	48		48	48		48
8047	Flint Rock Point	C	12		12	12		12	18		18	12		12
8048	Redd Lease	M	137		137	292	@	292	292		137	292	@	292
8049	Ayers	C	9		9	9		9	30		30	9		9
8050	Unallotted	C	unallotted		0	unallotted		0	unallotted		unallotted	unallotted		0
8051	Unallotted	C	unallotted		0	unallotted		0	unallotted		unallotted	unallotted		0
8052	Individual	M	149		149	150	@	150	150		149	150		150
8053	Mesa Verde	M	223		223	331	@	331	245		223	245	@	245
8054	Lanier	C	37		37	47		47	103		37	47		47
8055	Goodman Gulch	C	7		7	7		7	62		0	7		7
8056	Individual	C	1		1	1		1	1		1	1		1
8057	Yellowjacket Canyon	I	196	@	46	196	@	46	87		87	196	@	46
8058	Plateau Creek	C	28		28	37		37	29		28	37		37
8059	Davis	C	1		1	3		3	3		3	3		3
8060	Everett	C	1		1	4		4	4		4	4		4
8061	Robb Individual	C	3		3	6		6	3		3	6		6
8063	Sandrock	M	44		44	44	@	44	44		44	44	@	44
8064	Upper Trail Canyon	C	7		7	7		7	7		7	7		7
8065	Papoose Canyon	M	32		32	33	@	33	33		32	33		33

Table 9-E. (Continued)

Allot. no.	Allotment name	Mgmt. status	Resource Conservation: Potential capacity (AUMs)	AMPs	Resource Conservation: Present estimated capacity (AUMs)	Resource Utilization: Potential capacity (AUMs)	AMPs	Resource Utilization: Present estimated capacity (AUMs)	Current Management (no action): Current active preference (AUMs)	AMPs	Current Management (no action): Actual use (AUMs) 1/	Preferred: Potential capacity (AUMs)	AMPs	Preferred: Present estimated capacity (AUMs)
8066	Flodine Park	I	100	@	100	520	@	100	600		600	520	@	100
8067	Unallotted	C	unallotted		0	13		13	unallotted		unallotted	13		13
8068	Snyder	M	83		83	117	@	117	112		83	112	@	112
8069	Morgan Pasture	C	58		58	58		58	58		58	58		58
8400	Canby	C	8		8	10		10	10		10	10		10
8401	Mahan	M	108		108	162	@	162	162		108	162		162
8402	Eldridge	C	17		17	17		17	43		0	17		17
8403	Boggs	M	207		207	207	@	207	207		207	207		207
8404	Greer	C	26		26	26		26	64		64	26		26
8405	Montoya	C	20		20	51		51	20		20	51		51
8406	Scott Individual	C	8		8	11		11	11		11	11		11
8407	Huntington	C	75		75	193		193	75		75	193		193
8408	Patcheck	C	39		39	53		53	39		39	53		53
8409	Lightner	M	19		19	23	@	19	19		19	19		19
8411	Jenkins	C	4		4	4		4	10		10	4		4
8412	Palmer	C	88		88	88		88	88		88	88		88
8413	Cherry Creek	M	84		84	84	@	84	84		84	84		84
8414	Unallotted	C	unallotted		0	18		18	unallotted		unallotted	18		18
8415	Elderado	C	16		16	16		16	54		0	16		16
8416	Florida River	C	77		77	77		77	102		0	77		77
8417	Unallotted	C	unallotted		0	6		6	unallotted		unallotted	6		6
8418	Tonks	C	16		16	16		16	30		30	16		16
8419	Unallotted	C	unallotted		0	10		10	unallotted		unallotted	10		10
8420	Unallotted	C	unallotted		0	4		4	unallotted		unallotted	4		4
8422	Lemon Dam	M	unallotted		0				unallotted		unallotted			unallotted
8423	Lemon Dam	M	50		50	50	@	50	50		50	50		50
8424	Willow Creek	M	137		137	137	@	137	137		137	137		137
8425	Spring Gulch	M	292		292	292	@	292	292		292	292		292
8427	Unallotted	C	unallotted		0	20		20	unallotted		unallotted	20		20
8428	Unallotted	C	unallotted		0	26		26	unallotted		unallotted	26		26
8429	Wallace Gulch	M	139		139	166	@	139	139		139	139		139
8430	Former Keyes	C	21		21	21		21	21		21	21		21
8431	Gem Village	C	16		16	16		16	25		0	16		16
8432	Mankins	C	19		19	19		19	19		19	19		19
8433	Brown	C	64		64	64		64	223		222	64		64
8435	Unallotted	C	unallotted		0	38		38	unallotted		unallotted	38		38
8437	Unallotted	C	unallotted		0	unallotted		0	unallotted		unallotted	unallotted		0
8438	Outton Park	C	2		2	2		2	9		9	2		2
8439	Unallotted	C	unallotted		0	15		15	unallotted		unallotted	15		15
8440	Unallotted	C	unallotted		0	15		15	unallotted		unallotted	15		15
8441	Willow Draw	C	25		25	25		25	64		64	25		25
8442	Willow Draw	C	4		4	4		4	16		16	4		4
8443	Individual	C	12		12	12		12	12		12	12		12

Table 9-E. (Continued)

Allot. no.	Allotment name	Mgmt. status	Resource Conservation: Potential capacity (AUMs)	AMPs	Resource Conservation: Present estimated capacity (AUMs)	Resource Utilization: Potential capacity (AUMs)	AMPs	Resource Utilization: Present estimated capacity (AUMs)	Current Management (no action): Current active preference (AUMs)	AMPs	Current Management (no action): Actual use (AUMs) 1/	Preferred: Potential capacity (AUMs)	AMPs	Preferred: Present estimated capacity (AUMs)
8444	Coyote Park	C	6		6	6		6	20		20	6		6
8445	Coyote Park	C	5		5	5		5	5		5	5		5
8446	Gomez	M	52		52	71	@	71	52		0	52		52
8447	Archuleta Mesa	C	17		17	17		17	10		0	17		17
8448	Archuleta Mesa	M	147		147	228	@	228	203		147	203		203
8449	Manuel Cruz Estate	C	14		14	14		14	25		25	14		14
8450	Section 15	M	70		70	70	@	70	70		70	70		70
8451	Bigbee Brothers	M	36		36	58	@	58	36		36	36		36
8452	Chromo Mountain	M	39		39	60	@	60	39		39	39		36
8453	Martinez	C	7		7	7		7	2		2	7		7
8454	Bramwell	C	8		8	8		8	48		48	8		8
8455	Individual	C	18		18	18		18	40		40	18		18
8456	Vigil-Abeyta	M	94		94	321	@	321	94		94	94		94
8457	Upper Vigil	M	15		15	24	@	24	15		15	15		15
8458	Crowley	C	24		24	24		24	24		24	24		24
8459	Navajo River	C	71		71	71		71	71		71	71		71
8460	Canbey	C	2		2	2		2	6		6	2		2
8461	Section 15	C	7		7	7		7	25		25	7		7
8462	Section 15	M	71		71	109	@	109	109		71	109		109
8463	Vigil Mesa	M	60		60	310	@	310	60		0	60		60
8464	Macht	C	5		5	5		5	5		5	5		5
8900	Cement Creek	M	377		377	377		377	377		320	377		377
8901	Gladstone	M	270		270	270		270	270		270	270		270
8902	Eureka	M	800		800	800		800	800		677	800		800
8903	Animas River	M	202		202	202		202	202		201	202		202
8904	Unallotted	M	unallotted		0	unallotted		0	unallotted		unallotted	unallotted		0
8905	Cunningham Gulch	M	188		188	188		188	188		98	188		188
8906	Molas Lake	M	265		265	265		265	265		255	265		265
8907	Deer Park	M	200		200	200		200	200		149	200		200
8908	American Basin	M	250		250	250		250	250		232	250		250
	Total AUMs		43,160		35,170	90,109		44,413	64,232		50,351	73,601		42,771
	Change from current active preference.		-33%		-45%	+29%		-31%	0		-22%	+13%		-33%
	Change from 3-year actual use.		-14%		-30%	+44%		-12%	+22%		0	+32%		-15%

@ = Allotment Management Plans to be developed.

1/ Corresponds to 3-year average of actual use; in absence of actual use records, licensed use was substituted.

2/ Exchange of use.

3/ Temporary nonrenewable use.

Source: BLM Data 1984.

Table 9-F. Potential Range Improvements

Allot. no.	Fence (mi)	Stock ponds (no.)	Spring develop-ment (no.)	Wind-mill (no.)	Vegetation treatments (ac)	Prescribed burn (ac)	Seed (ac)1/	Maintenance of existing land treatments (ac)2/
7001	3	5			1,000		1,000	
7002	1						500	
7004		2						
7005	1							
7006		2						200
7007		1						
7008	2	1		1				400
7010					600	100	700	
7014	1	5	4		500	500	1,000	800
7015								300
7016	12	8			2,500			5,000
7017		1			200			
7018					100		100	100
7022		2			200			200
7024	2	2						
7025	2				1,000		1,000	
7027		2	2					500
7028	3	4			200		200	
7031	2	8	4		500	500	1,000	
7032	2	4			500	300	800	
7034	2	2						1,000
7035	1	3			800		800	1,000
7036					400		400	2,200
7037		2						
7038					800			1,200
7039					1,000		1,000	
7041	5	6						800
7042				5				
7044	2	2						
7045	2	2			500		500	
7046	8	5			600		600	2,000
7048		3		2	1,000			700
7081		7						
7086		1						
7100					200			500
7101		5				400	400	600
7103	2							
7107		2						

Table 9-F. (Continued)

Allot. no.	Fence (mi)	Stock ponds (no.)	Spring develop-ment (no.)	Wind-mill (no.)	Vegetation treatments (ac)	Prescribed burn (ac)	Seed (ac)1/	Maintenance of existing land treatments (ac)2/
7201		4			300		300	300
7206		2			300		300	
7300				1				800
7303		2				500	500	
8002	1							
8003	4	3			500		500	
8004		5						
8007	2	3						2,000
8008		2			200		200	
8009	2	3						
8011	3	3						300
8012								2,500
8013	2	5						400
8018	2	3						
8019	1	2						
8020	2	3						
8033	3							
8035	1				500		500	
8057	1							
8066	3							
8456		2						
Total	80	129	10	9	14,400	2,300	12,300	23,800

Note: Above range improvements and vegetation manipulations were developed without completing actual AMPs. Figures represent development scenario of needed facilities based upon professional analysis of: (1) Existing improvements; (2) topography; (3) vegetation types; and (4) potential for improvement. When detailed AMPs are developed, it is expected that estimates above could change significantly due to conditions not identified in this limited analysis. This is representative of a facility-development philosophy regarding range improvements. (More complete depiction of range improvements by allotment by alternative available in San Juan Resource Area Office).

1/ Seeding includes both interseeding and aerial seed applications.

2/ Maintenance includes chaining, plowing, burning, roller chopping, and seeding.

Source: BLM Data 1984.

APPENDIX NINE-G

METHODS USED IN RANGE ANALYSIS

Methods for Vegetation Inventory

Vegetation inventory on public land in the San Juan-San Miguel planning area was conducted beginning in 1981 and field work was completed in 1982. The data collected have been used in this RMP to classify sites and to determine the vegetation condition of plant communities and the composition, productivity, and suitability of the land for livestock grazing.

Classification

Sites dominated by grassland, shrub, or mixture of grass/shrub vegetation were classified as range sites according to the SCS. This system interprets the site based upon geographic region; soil characteristics, including texture and depth; mean annual precipitation; and climax vegetation, to the extent that it can be interpreted for the site. Most pinyon-juniper dominated sites were classified as such and interpreted according to woodland sites developed by the SCS.

Vegetation Condition

Inventory crews first identified and delineated the boundaries for the sites to be inspected. Estimates of plant species composition, based on weight, were then made for the plant communities found on each site. The present species composition was compared to the potential climax composition for the site. A condition rating was computed for the vegetation on each site; it represents the extent to which the site differs from potential climax. While this condition rating is often referred to as range condition, this RMP refers to the rating as vegetation condition.

Four condition classes are set forth by the SCS. A plant community in excellent condition exhibits little change in species composition when compared to the potential climax plant community for the site. Between 100 percent and 75 percent of the kinds and amounts of vegetation produced would be found in climax. Good condition communities produce between 50 percent and 16 percent of the kinds and amounts of vegetation found in climax. Poor condition communities produce between 25 percent and 0 percent of the kinds and amounts of vegetation found in climax. A fifth condition class of unclassified was used in the inventory to designate vegetation communities that could not be legitimately compared to a climax community. The unclassified rating was applied to areas that had been plowed and seeded, areas where native vegetation has been manipulated by mechanical or chemical means, or areas of undergrowth communities having dense forest canopies.

Suitability

The suitability for livestock grazing was assessed. One of three ratings was assigned by allotment: suitable, no environmental factors restricting livestock access and use of the site; potentially suitable, environmental factors presently limit livestock

access or use, but changes could be made that would make the site suitable; and unsuitable, environmental factors presently limit livestock access or use that cannot be changed. The major criteria used to rate range land suitability are: distance from water, slope or other physical barriers, and forage production.

Carrying Capacity Estimates

The weight estimate write-ups were used to determine the percent composition by plant species and the total herbage production by range site. Plant species were divided into forage groups by grasses, forbs, and shrubs. Proper use factors were developed for each plant species by class of grazing animal for cattle, sheep, and big game. The total allowable use by class of grazing animal was determined by range site and totaled for an allotment. The suitability criteria listed above was applied on all areas evaluated. The following forage requirements were used to determine the total allowable use by allotment by grazing animal. An AUM was considered to be 850 lb of air dry forage.

The following forage requirements (air dry forage) were used for other grazing animals:

1. Deer - 90 lb for winter (5 months, November-March)
   115 lb for remainder of year

2. Elk - 300 lb for winter (5 months, November-March)
   375 lb for remainder of year

3. Wild horse - 850 lb yearlong

APPENDIX 9-H

ALLOTMENT CONDITION AND AUTHORIZED USE

Table 9-H. Summary of Allotment Condition and Authorized Use.

Allot. no.	Allotment name	Mgmt. status	Total public acres	Ecological vegetation condition on public lands (acres) Excellent	Good	Fair	Poor	Unclass. or unmapped	Present class livestock	Current season of use	Critical period
The following allotments suitable for Cattle, Horses, or Sheep.											
7000	Upper Disappointment	M	1,996					1,996	C	6/1 - 11/15	
7001	Mailbox Park	I	6,611			408	6,203		S	1/1 - 2/15	4/15 - 5/15
7002	Gypsum Gap	I	2,895			1,061	1,834		S	12/1 - 3/15	4/15 - 5/15
7003	Lee Lands	C	2,062				445	1,617	S	6/1 - 7/15	
										9/15 - 10/29	
7004	Dolores Canyon	M	2,891		125	518	179	2,069	C	11/25 - 1/3	
7005	Salt Arroyo	I	10,956			726	10,230		C	11/15 - 2/28	4/15 - 5/15
7006	Gyp Ridge	I	3,155			712	2,166	277	C	12/1 - 2/28	4/15 - 5/15
7007	Uncompahgre Bench	M	13,702		506	3,043	7,872	2,281	C	5/15 - 5/27	
										11/13 - 12/23	
7008	Twenty-five Mesa	I	5,373			368	4,519	486	C	10/16 - 12/7	4/15 - 5/15
7009	East Summit Mesa	C	119			42	77		C	4/1 - 5/30	
										10/16 - 12/30	
7010	Wickson Draw	I	4,441		41	535	3,865		C	11/10 - 4/30	4/15 - 5/15
7011	Ayers Individual	M	4,593			158	67	4,368	C	4/19 - 5/18	
7012	Lion Canyon	C	313					313	C	4/1 - 10/31	
7013	San Miguel River	C	937					937	C	5/16 - 6/15	
										10/16 - 11/15	
7014	Mesa Creek	I	60,257		2,063	14,131	33,082	10,981	C	6/15 - 11/10	4/15 - 5/15
7015	Bush Canyon	M	4,997			67	1,957	2,973	C	3/1 - 5/6	
										10/26 - 12/31	
7016	Dry Creek Basin	I	114,902	1,525	3,902	35,207	59,043	15,225	S,C,H	3/1 - 2/28	4/15 - 5/15
7017	McKenna Peak	M	1,025			642	383		C	5/1 - 10/31	
7018	Maverick Draw	I	1,993			45	1,656	292	C	11/2 - 12/1	4/15 - 5/15
7019	Summit Point	C	1,691			94	1,597		C	7/1 - 10/31	
										10/16 - 12/1	

Table 9-H. (Continued)

Allot. no.	Allotment name	Mgmt. status	Total public acres	Ecological vegetation condition on public lands (acres) Excellent	Good	Fair	Poor	Unclass. or unmapped	Present class livestock	Current season of use	Critical period
7020	Roc Creek	C	1,268			680	93	495	C	11/1 - 3/31	
7021	Rawlings Individual	C	353					353	C	5/1 - 10/31	
7022	Burn Canyon	I	1,788			271	1,045	472	S	12/20 - 2/19	4/15 - 5/15
7023	Sharp Canyon	I	162					162	C	5/1 - 9/30	
7024	Lillylands-West	M	2,387			1,902	50	435	C	1/17 - 3/31	
7025	Island Mesa	I	25,180		170	8,673	12,533	3,534	C	11/1 - 5/31	5/1 - 5/30
7026	La Sal Creek	C	179					179	C	5/1 - 9/30	
7027	Coke Ovens	I	7,660	22	64	4,245	1,431	1,898	C	2/1 - 3/31	4/15 - 5/15
7028	Warden Draw	I	4,225			20	2,072	2,133	C	5/1 - 5/31	5/1 - 5/30
										10/16 - 12/1	
7029	Lone Mesa	M	1,421				1,288	133	C	5/19 - 6/30	
										11/5 - 11/9	
7031	Tabeguache Creek	I	17,912		69	7,228	7,976	2,639	C	5/15 - 6/14	4/15 - 5/15
										1/1 - 3/31	
7032	Sawtooth	I	23,236		758	6,771	11,981	3,726	C	1/1 - 4/30	4/15 - 5/15
7033	Buckeye	M	835		34	353	321	127	C	6/1 - 9/30	
7034	Slick Rock	I	26,831		825	2,797	19,461	3,748	C,H	10/16 - 5/15	4/15 - 5/15
7035	Naturita Ridge	I	10,555		185	6,210	1,363	2,797	S	12/5 - 3/20	4/15 - 5/15
7036	Disappointment	I	61,515		5,639	21,502	19,238	15,136	C	11/1 - 5/31	4/15 - 5/15
7037	Davis Mesa	I	2,956			223	1,928	805	C	12/1 - 4/30	4/15 - 5/15
7038	Spud Patch	M	9,150		591	846	1,641	6,072	C	5/16 - 11/15	
7039	Ute Ranch	I	33,275	9	1,088	5,763	12,733	12,399	C	3/3 - 5/31	4/15 - 5/15
										11/4 - 2/24	
7040	Pinion	C	541					541	C	5/1 - 6/30	
7041	Young-DOW	I	12,237			4,087	7,140	1,010			
7042	Dobie Canyon Individual	I	2,647		147	2,353		147	C	10/16 - 12/15	4/15 - 5/15
7043	South Mountain	C	881				857	24	C	6/19 - 10/9	
7044	Lion Creek Basin	M	5,247			302	3,857	1,088	C	5/15 - 6/24	
7045	Horse Park	I	6,647				6,647		C	5/1 - 10/31	4/15 - 5/15
7046	Indian Valley	I	18,346		392	1,949	16,005		C	1/29 - 5/31	4/15 - 5/15

Table 9-H. (Continued)

Allot. no.	Allotment name	Mgmt. status	Total public acres	Ecological vegetation condition on public lands (acres) Excellent	Good	Fair	Poor	Unclass. or unmapped	Present class livestock	Current season of use	Critical period
7047	Home Bench	C	1,496			261	1,235		C	4/15 - 6/14	
7048	Wray Mesa	I	48,797		250	7,084	12,317	4,236	C	11/1 - 5/31	4/15 - 5/15
7049	Desert Claim	C	1,680					1,680	C	5/15 - 10/31 11/15 - 12/20	
7050	Plateau	C	353					353	C	6/1 - 11/30	
7051	Belmear Mountain	C	411				411		C	7/1 - 10/30	
7052	Ryman Creek	C	621				621		C	12/1 - 6/15	
7075	Lavender Exchange of Use	C	1,169			6	256	907	C		
7076	Houser	M	3,163		182	2,110	508	363	C	3/1 - 5/15	
7077	First Park	C	148			28	120		C		
7078	Feedlot	C	510			510			C	11/1 - 4/30	
7079	River	C	1,300			504	643	153	C	12/16 - 5/31	
7080	Rowher Canyon	C	680			652	2	26	C	3/1 - 5/31	
7081	Swain Bench	I	5,422		224	3,722	742	734	C	12/1 - 2/28	4/15 - 5/15
7085	Pocket Individual	C	1,375			1,156	219		C	5/1 - 5/31	
7086	Horse Bench	C	610			405	205		C	5/2 - 5/11	
7087	Colombo	C	215			198		17	C	5/11 - 5/31	
7088	Sundown	C	1,743			1,233	458	52	C	12/27 - 1/26	
7100	Carpenter Ridge Common	M	7,135		303	3,849	1,253	1,730	C	5/1 - 6/5	
7101	East Paradox Common	I	16,255	1,845	1,059	5,550	5,452	2,349	C	1/1 - 2/28	3/1 - 4/15
7102	Sunrise Gulch Common	C	1,597		18	327	1,192	60	C	11/27 - 12/26	
7103	Third Park Common	M	4,270		481	1,796	1,287	706	C	11/1 - 12/15	
7104	Spencer Lake	C	920			719	201		C	6/16 - 10/31	
7105	Second Park	C	750			358	304	88	C	12/1 - 4/30	
7106	Tuttle Draw	C	1,231			20	758	453	C	5/1 - 5/31	
7107	Coal Canyon	M	5,391			401	4,775	215	C	10/16 - 12/15	
7200	River	C	2,225			2,045	180		C	6/15 - 10/15	
7201	Lillylands	I	7,136			1,402	5,075	659	S	1/1 - 7/14	4/15 - 5/15
7202	Upper Maverick Draw	C	488			31	457		C	5/1 - 6/1 11/10 - 12/25	

Table 9-H. (Continued)

Allot. no.	Allotment name	Mgmt. status	Total public acres	Ecological vegetation condition on public lands (acres) Excellent	Good	Fair	Poor	Unclass. or unmapped	Present class livestock	Current season of use	Critical period
7203	Naturita Canyon	C	630			123		507	C	12/17 - 4/15	
7204	Beaver Rim	C	67				53	14	C,H	4/1 - 4/30	
7205	Leopard Creek	C	391				391		C	5/1 - 10/31	
7206	McKee Draw	I	1,562			62	1,043	457	C	5/15 - 6/14 11/15 - 12/14	4/15 - 5/15
7207	Big Bear Creek	C	542				287	255	C	5/1 - 6/30 9/16 - 11/15	
7208	Upper Mail Box	M	1,429			49	776	604	C	5/1 - 6/14 12/1 - 12/30	
7209	Hamilton Mesa	C	410					410	C	6/1 - 6/30	
7210	Little Maverick Draw	M	1,078				424	654	C	1/1 - 1/31	
7211	Beaver Canyon	C	314					314	C	6/16 - 8/30	
7212	Unallotted	C	120					120			
7213	Unallotted	C	500					500	C	5/16 - 7/15	
7214	Rincone	C	2,280					2,280	C	5/16 - 7/15	
7215	Cone	M	3,243					3,243	C	5/20 - 10/10	
7216	San Miguel Rim	M	679				339	340	S	5/15 - 6/14 11/22 - 1/24	
7217	Sawpit Individual	C	1,194					1,194	S	7/16 - 8/15	
7218	Norwood Hill	C	144					144	C	5/1 - 8/31	
7219	Bolinger Ditch	C	349					349	C	6/1 - 9/30	
7220	Williams Ditch	C	57			47		10	H	3/1 - 2/28	
7221	Duroy	C	3,244					3,244	C	6/1 - 10/31	
7222	Coventry	I	841					841	C	5/1 - 6/12	4/15 - 5/15
7223	Little Baldy	M	1,900					1,900	C	5/16 - 7/15 10/16 - 11/30	
7224	High Mesa	M	992			126	79	787	C	1/15 - 2/25	
7225	Oak Hill	C	42					42	C	6/1 - 11/1	
7226	Summer Camp Creek	C	120			40	80		C	6/15 - 10/14	
7227	Redvale	C	402					402	C	5/1 - 5/15	

Table 9-H. (Continued)

Allot. no.	Allotment name	Mgmt. status	Total public acres	Ecological vegetation condition on public lands (acres) Excellent	Good	Fair	Poor	Unclass. or unmapped	Present class livestock	Current season of use	Critical period
7251	Sawdust Gulch	C	280					280	C	4/1 - 12/31	
7252	Buck Canyon	C	10					10	C	6/1 - 10/31	
7253	Alder Creek	C	120					120	C	5/15 - 9/30	
7300	Dry Park	I	4,112			522	142	3,448	C	5/10 - 5/31 10/25 - 11/24	4/15 - 5/15
7301	Horsefly Common	M	449				39	410	C	5/27 - 6/26	
7302	Uncompahgre Common	M	387				53	334	C	6/1 - 10/15	
7303	Barkelew Draw Common	I	5,971			144	5,635	192	C	5/15 - 6/14 10/16 - 11/15	4/15 - 5/15
7305	Beaver Mesa	M	1,143				399	744	C	5/20 - 10/10	
7306	Unallotted	C	560					560			
8000	Unallotted	C	80					80			
8002	Squaw Canyon	I	4,765			77	194	4,494	C	6/1 - 11/1	4/15 - 5/15
8003	Big Canyon	I	1,916				1,709	207	C	5/11 - 9/30	4/15 - 5/15
8004	Dolores River	I	18,334		615	8,205	4,505	5,009	C	11/16 - 3/15	4/15 - 5/15
8005	Sheep Point AMP	M	4,541			642	56	3,843	C	6/11 - 10/31	
8006	Todd Individual	C	488			28	88	372	C,H	5/1 - 11/30	
8007	Cross Canyon	I	29,528			271	1,845	27,412	C	4/29 - 5/31 12/1 - 2/28	4/15 - 5/15
8008	Ruin Canyon	M	788				50	738	C	4/20 - 5/30 10/1 - 10/31	
8009	Hovenweep Canyon	I	6,122			470	527	5,125	C	4/16 - 5/30 9/1 - 1/5	4/15 - 5/15
8010	Dry Canyon	C	665				18	647	C	6/1 - 10/31	
8011	Lower McElmo	I	8,662	748	1,010	3,271	3,633		C	12/1 - 4/30	4/15 - 5/15
8012	Cahone Mesa AMP	M	22,925	147	2,519	2,346	1,504	16,409	C	11/16 - 5/20	
8013	Individual	I	22,699			223	915	21,561	C	12/16 - 5/30	4/15 - 5/15
8014	Alkali	M	794			73	52	669	C	12/1 - 4/14	

Table 9-H. (Continued)

Allot. no.	Allotment name	Mgmt. status	Total public acres	Ecological vegetation condition on public lands (acres) Excellent	Good	Fair	Poor	Unclass. or unmapped	Present class livestock	Current season of use	Critical period
8015	Dolores	C	297				82	215	C	5/15 - 6/14	
8016	McCabe	C	40					40	C	12/1 - 12/30	
8017	Weber Canyon	C	40					40	C	5/1 - 12/31	
8018	Yellowjacket	I	5,727		2,092	2,726	771	128	C	12/1 - 5/20	4/15 - 5/15
8019	Cannonball	I	2,829			1,090	1,739		C	4/1 - 5/10	4/15 - 5/15
										12/1 - 1/7	
8020	Burro Point AMP	I	9,519	93	199	3,300	1,620	14,307	C	12/1 - 5/20	4/15 - 5/15
8021	Rock Creek	M	2,443				11	2,432	C	3/25 - 4/9	
8022	Sand Canyon	C	377					377	C	12/1 - 5/30	
8023	Sand Canyon	C	2,264				107	2,157	C	4/16 - 5/31	
										11/16 - 12/15	
8024	Trail Canyon	M	5,173			75	312	4,786	C	4/16 - 5/25	
										11/21 - 1/15	
8025	Aztec Canyon	M	1,830				168	1,662	C	5/1 - 5/31	
										11/16 - 12/15	
8026	Mathias	C	218					218	C,S	10/1 - 11/30	
8027	Gawith	C	1,017				168	849	C	11/1 - 12/31	
8028	Mud Creek	C	1,979				370	1,609	C	4/20 - 5/25	
8029	Hurst	C	370				17	353	C	3/1 - 11/30	
8030	Bement	C	480				44	436	C	10/1 - 10/31	
8031	Noland	C	260				73	187	C	6/1 - 7/31	
8032	N. Menefee Mountain	C	505					505	C	6/1 - 9/1	
8033	Veach	I	6,135			597	4,354	1,184	C	12/1 - 5/20	4/15 - 5/15
8034	Willow Creek	C	880				46	834	C	5/1 - 6/3	
8035	Hamilton Mesa	I	7,577		302	4,870	1,690	715	C	12/15 - 5/15	4/15 - 5/15
8036	Schuster	C	294			294			C	4/16 - 5/31	
										11/1 - 12/10	
8037	Ute Mountain	C	334			168	166		C	4/16 - 5/31	
										12/1 - 12/31	

Table 9-H. (Continued)

Allot. no.	Allotment name	Mgmt. status	Total public acres	Ecological vegetation condition on public lands (acres) Excellent	Good	Fair	Poor	Unclass. or unmapped	Present class livestock	Current season of use	Critical period
8038	Monument	C	620					620	C	4/1 - 5/1 10/1 - 11/1	
8039	Lower Aztec Canyon	M	500				10	590	C	2/1 - 4/30	
8040	Unallotted	M	972			295	352	325			
8041	Burro Individual	M	327			72	93	162	C	12/1 - 5/15	
8042	Mancos River	M	899	97	57	37	8	700	C	12/1 - 4/20	
8043	West Weber Mountain	C	3,227					3,227	C	9/1 - 9/30	
8044	Weber Mountain	C	708					708	C	1/1 - 4/30	
8045	Doerfer	C	975				74	901	C	5/1 - 5/31 10/1 - 11/30	
8046	East Canyon	C	2,350				52	2,298	C,H	3/1 - 2/28	
8047	Flint Rock Point	C	340					340	C	8/1 - 9/24	
8048	Redd Lease	M	3,294				167	3,127	S	5/20 - 6/10 10/1 - 10/10	
8049	Ayers	C	200			62	8	130	C	5/1 - 5/31 10/1 - 11/31	
8050	Unallotted	C	100					100			
8051	Unallotted	C	1,080					1,080			
8052	Individual	M	2,567			6	343	2,218	S	12/1 - 3/12	
8053	Mesa Verde	M	5,585				882	4,703	C,S	12/1 - 5/31	
8054	Lanier	C	486				486		C	6/1 - 10/31	
8055	Goodman Gulch	C	319				38	281	C	3/1 - 4/15 10/1 - 11/15	
8056	Individual	C	40				30	10	C	5/21 - 6/5	
8057	Yellowjacket Canyon	I	2,563		125	197	637	1,604	C	11/20 - 4/5	4/15 - 5/15
8058	Plateau Creek	C	890			188	702		C	6/1 - 11/20	
8059	Davis	C	40				30	10	C	9/1 - 11/30	
8060	Everett	C	40				15	25	C	6/1 - 9/31	
8061	Robb Individual	C	30				8	22	S	10/1 - 10/31	
8063	Sandrock	M	513					513	C	6/1 - 10/15	
8064	Upper Trail Canyon	C	160			46	29	85	C	11/1 - 2/28	

Table 9-H. (Continued)

Allot. no.	Allotment name	Mgmt. status	Total public acres	Ecological vegetation condition on public lands (acres) Excellent	Good	Fair	Poor	Unclass. or unmapped	Present class livestock	Current season of use	Critical period
8065	Papoose Canyon	M	1,085					1,085	C	2/1 - 3/31 9/16 - 11/15	
8066	Flodine Park	I	4,723		143	1,415	3,123	42	C	2/1 - 5/30	4/15 - 5/15
8067	Unallotted	C	487					487			
8068	Snyder	M	1,199		717	253	229		C	1/16 - 3/31	
8069	Morgan Pasture	C	1,410				201	1,209	C	4/1 - 6/1	
8400	Canby	C	86		24			62	C	6/1 - 10/30	
8401	Mahan	M	639		223			416	C	5/20 - 6/10 10/20 - 11/4	
8402	Eldridge	C	440					440	C	5/1 - 10/31	
8403	Boggs	M	2,187				497	1,690	C	6/16 - 9/15	
8404	Greer	C	579					579	C	6/1 - 11/30	
8405	Montoya	C	227		49		20	158	C	6/1 - 10/31	
8406	Scott Individual	C	40		23			17	S	5/1 - 6/30	
8407	Huntington	C	714		330	36	100	248	C	5/1 - 9/30	
8408	Patcheck	C	343				44	299	C	6/1 - 10/15	
8409	Lightner	M	633			28	264	341	C	6/1 - 10/22	
8411	Jenkins	C	80					80	C	6/1 - 10/31	
8412	Palmer	C	745					745	C,S	5/1 - 10/31	
8413	Cherry Creek	M	618				104	514	C	6/1 - 8/31	
8414	Unallotted	C	360			16		344			
8415	Elderado	C	270			55		215	C	6/1 - 10/15	
8416	Florida River	C	857			38	596	223	C	5/11 - 9/25	
8417	Unallotted	C	170				16	154			
8418	Tonks	C	250					250	C	6/1 - 10/31	
8419	Unallotted	C	210				24	180			
8420	Unallotted	C	92					92			
8422	Lemon Dam	M	699					699			
8423	Lemon Dam	M	407					407	C	8/1 - 9/30	
8424	Willow Creek	M	973		14		110	849	C	7/1 - 10/15	

Table 9-H. (Continued)

Allot. no.	Allotment name	Mgmt. status	Total public acres	Ecological vegetation condition on public lands (acres) Excellent	Good	Fair	Poor	Unclass. or unmapped	Present class livestock	Current season of use	Critical period
8425	Spring Gulch	M	2,534					2,534	C	6/1 - 10/30	
8427	Unallotted	C	414					414			
8428	Unallotted	C	280					280			
8429	Wallace Gulch	M	1,847				399	1,448	C	5/1 - 9/30	
8430	Former Keyes	C	160					160	C	6/1 - 10/31	
8431	Gem Village	C	400		32		113	255	C	8/16 - 9/30	
8432	Mankins	C	200					200	C	4/1 - 10/31	
8433	Brown	C	1,594					1,594	C	6/10 - 10/9	
8435	Unallotted	C	566					566			
8437	Unallotted	C	26					26			
8438	Dutton Park	C	40					40	C	5/1 - 9/30	
8439	Unallotted	C	240					240			
8440	Unallotted	C	160					160			
8441	Willow Draw	C	434				342	92	C	7/1 - 9/31	
8442	Willow Draw	C	80					80	C	6/16 - 6/30	
										8/16 - 8/30	
8443	Individual	C	160					160	C	6/1 - 6/30	
8444	Coyote Park	C	80					80	C	6/1 - 6/30	
8445	Coyote Park	C	80					80	C	5/1 - 11/30	
8446	Gomez	M	400			256		144	C	6/15 - 10/1	
8447	Archuleta Mesa	C	160					160	C	9/11 - 10/31	
8448	Archuleta Mesa	M	1,309					1,309	C	6/1 - 10/15	
8449	Manuel Cruz Estate	C	91					91	C	6/1 - 10/15	
8450	Section 15	M	746				163	583	C	6/1 - 10/31	
8451	Bigbee Brothers	M	831					831	C	5/16 - 9/30	
8452	Chromo Mountain	M	430					430	C	5/16 - 9/30	
8453	Martinez	C	46					46	S	5/1 - 9/30	
8454	Bramwell	C	215					215	C	5/1 - 11/30	
8455	Individual	C	160					160	C	5/1 - 10/31	
8456	Vigil-Abeyta	M	1,317					1,317	C	5/16 - 9/1	

Table 9-H. (Continued)

Allot. no.	Allotment name	Mgmt. status	Total public acres	Ecological vegetation condition on public lands (acres) Excellent	Good	Fair	Poor	Unclass. or unmapped	Present class livestock	Current season of use	Critical period
8457	Upper Vigil	M	232					232	C	6/20 - 6/29	
8458	Crowley	C	200					200	C	5/1 - 6/15	
										10/1 - 11/30	
8459	Navajo River	C	404					404	C	5/21 - 10/1	
8460	Canby	C	40				36	4	C	5/16 - 6/30	
8461	Section 15	C	133				111	22	C	6/1 - 10/15	
8462	Section 15	M	931					931	C	6/20 - 11/1	
8463	Vigil Mesa	M	1,052					1,052	C	6/16 - 8/15	
8464	Macht	C	40					40	H	6/1 - 10/31	
The following allotments suitable for Horses or Sheep only.											
*8900	Cement Creek	M	4,181					4,181	S,H	7/10 - 9/30	
*8901	Gladstone	M	2,325					2,325	S,H	7/10 - 9/30	
*8902	Eureka	M	6,221		2,780	1,338		2,053	S,H	7/10 - 9/30	
*8903	Animas River	M	3,072		783	784	131	1,374	S,H	7/10 - 9/30	
*8904	Unallotted	M	1,377					1,377			
*8905	Cunningham Gulch	M	1,738					1,738	S,H	7/10 - 9/30	
*8906	Molas Lake	M	1,876					1,876	S,H	7/10 - 9/30	
*8907	Deer Park	M	3,344					3,344	S,H	7/10 - 9/30	
*8908	American Basin	M	2,650		421	571		1,658	S,H	7/10 - 9/30	

*Silverton allotments were previously covered in the Gunnison Basin-American Flats/Silverton EIS 1982.
Source: BLM Data 1984.

APPENDIX NINE-I

RANGE ASSUMPTIONS

Season-of-Use--Assumptions and Determinations

Critical Periods

Grass season	Low elevation (4,000-6,000 ft)	Medium elevation (6,000-8,000 ft)	High elevation (>8,000 ft)
Cool	3/1 - 4/15	4/15 - 5/15	5/1 - 5/31
Warm	4/15 - 5/15	5/1 - 5/30	5/15 - 6/15

Stipulations

1. Spring use will not be permitted on native ranges during the critical period unless:

   A. A grazing system is implemented which provides critical period rest once every three years (minimum);

   B. A spring use pasture, i.e., crested wheatgrass seeding, is developed to absorb grazing use in meeting the rest requirement.

2. Grazing use during any portion of the critical period will be limited to no more than 30 percent of the total preference and no more than 50 percent utilization of the key forage species current season's growth for that critical period will be permitted.

3. Season-of-use on category "C" allotments will be determined by permittee in the allotment.

4. Season-of-use on category "M" allotments will remain the same as currently permitted until monitoring data indicate a change is necessary. At that time, season-of-use criteria will then apply.

5. It is assumed that range readiness will occur at the end of the critical period and occurs when:

   A. 4" to 6" green leaf on cool season key forage species. Some key cool season species might include.

      a. Indian ricegrass--Oryzopsis hymenoides
      b. Junegrass--Koleria cristata
      c. Squirreltail--Sitanion hystrix
      d. Needle and thread--Stipa comata
      e. Crested wheatgrass--Agropyron cristatum

   B. Soil mantle is dry and firm.

6. Range readiness criteria (no. 5 above) will apply to seedings.

Table 9-1-1. Suggested Stock Rates by Alternative by Category (AUMs).

Management Status		
Resource Conservation Alternative		
Maintain	Improve	Custodial
Actual use (3-year average if available) or Licensed use	Total allowable minus wildlife equals Livestock AUMs[4/] [6/] cannot exceed suitable AUMs for kind of livestock	Same as I (except when wildlife equals 0, use allowable livestock AUMs)
Preferred Alternative		
Existing preference[1/]	Estimate[2/]	Estimate[3/]
Resource Utilization Alternative		
Maintain	Improve	Custodial
Existing preference or inventory data, whichever is greater for livestock kind[1/]	Estimate[7/]	Same as I plus[5/]
Current Management Alternative		
Average actual use[1/]	Average actual use (licensed)[1/]	Average actual use

Stipulations:

[1/] Future adjustments will be based on monitoring data.

[2/] Use existing preference unless amount varies by +20% of inventory data (allowable by livestock kind), if amount exceeds ±20% then use inventory data. Actual adjustments will be determined through monitoring data.

[3/] Same as [2/], except consider change where feasible to 100% F.R.

[4/] Unallotted allotments remain unallotted.

[5/] License unallotted allotment where feasible.

[6/] Use average 3-year actual (or licensed active use) if within ±20% of inventory data.

[7/] Compare existing preference with inventory data for allowable kind of livestock and if within ±20% use the greater value. If amount exceeds ±20% use inventory.

Source: BLM Data 1984.

Kind of Livestock

Changes require evaluation through the EA process.

1. Suitability (vegetation, slope, etc.);
2. Season-of-use;
3. Ability to control (fences, etc.);
4. Elevation;
5. AUM conversions will be based on inventory data and monitoring.

Monitoring (Intensity and type studies by allotment needs.)

1. Actual use--utilization;
2. Trend;
3. Cover;
4. Special studies as required.

Priority for Monitoring

1. Allotments where conflicts exist or adjustments anticipated;
2. I, M, C category allotments, respectively, as specified in monitoring plan to be developed after the Final EIS.

Assumptions

1. AMPs not fully implemented have BLM priority over non-AMP areas.
2. One growing season rest on release-type treatments; two growing seasons rest on seedings.
3. Benefit/cost will be used when selecting range improvements.

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GRA 9--McKenna Peak Area, 49 p.
GRA 10--Cross Canyon-Squaw/Papoose Canyon-Cahone Canyon, 78 p.
GRA 11--Menefee Mountain-Weber Mountain, 74 p.

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U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

Map

Box Elder - Cache Wildlife
Management Area (Utah)
BLM

Map Enclosures

Resource Conservation

Resource Utilization

Current Management

Preferred Alternative

Grazing Allotments

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

1984

San Juan - San Miguel

RESOURCE MANAGEMENT PLAN
MAP

Map Enclosures

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1984

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RESOURCE MANAGEMENT PLAN
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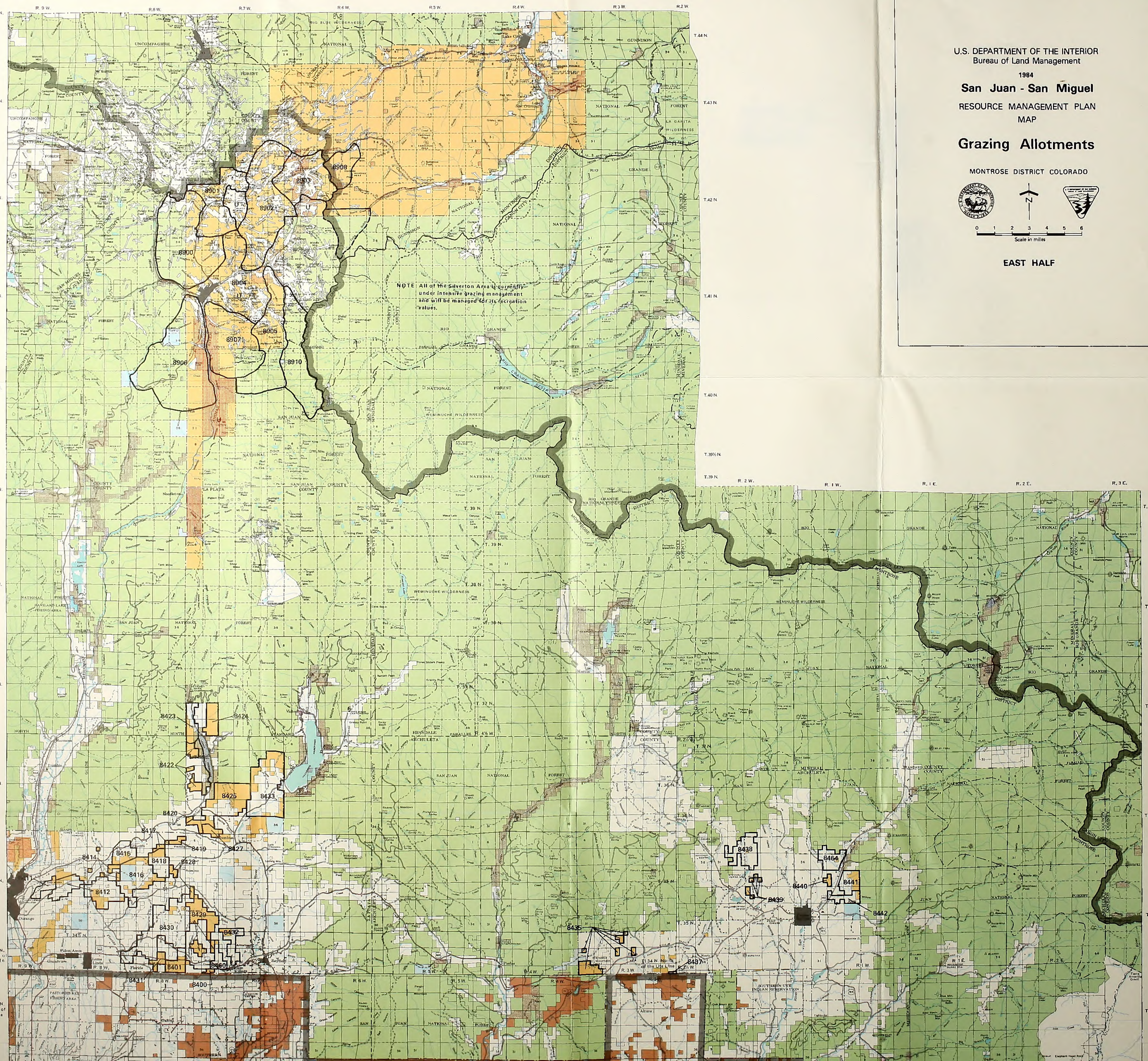
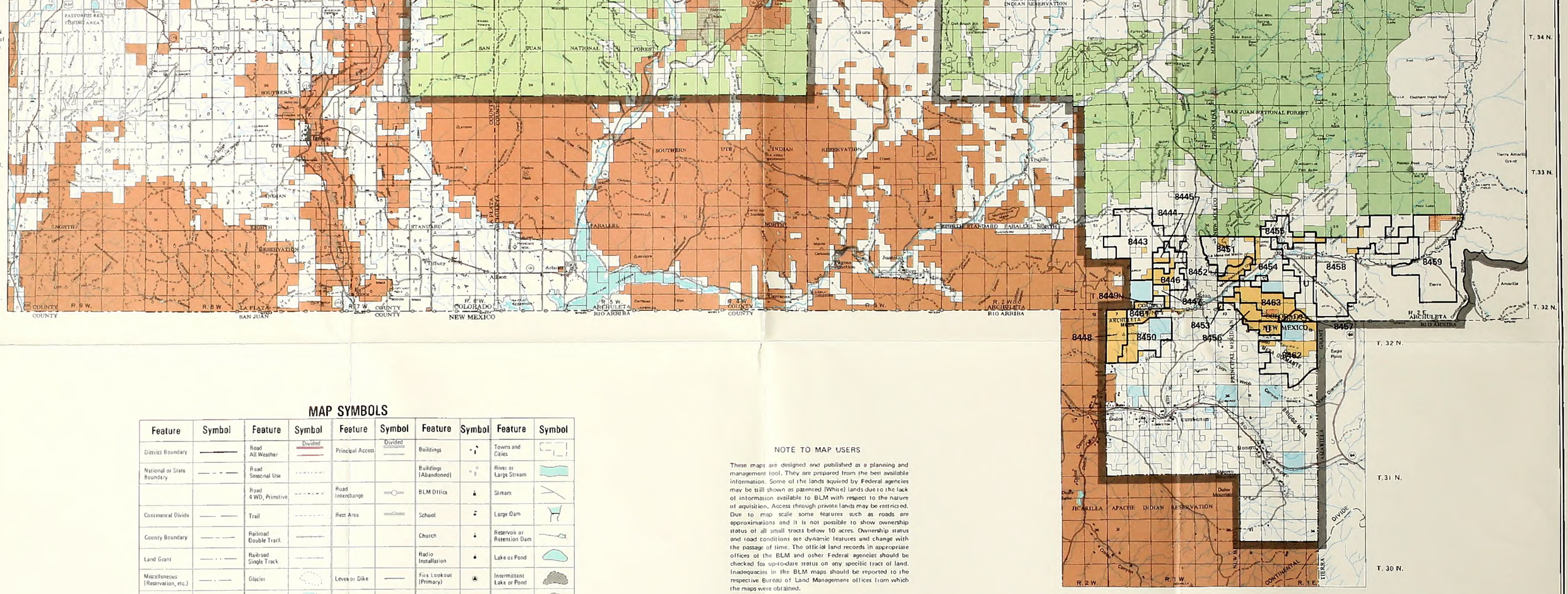
Grazing Allotments

MONTROSE DISTRICT COLORADO

0 1 2 3 4 5 6
Scale in miles

EAST HALF





MAP SYMBOLS

Feature	Symbol	Feature	Symbol	Feature	Symbol	Feature	Symbol	Feature	Symbol
District Boundary		Road All Weather	Divided	Principal Access	Divided	Buildings		Towns and Cities	
National or State Boundary		Road Seasonal Use				Buildings (Abandoned)		River or Large Stream	
		Road 4 WD, Primitive		Road Interchange		BLM Office		Stream	
Continental Divide		Trail		Rest Area		School		Large Dam	
County Boundary		Railroad Double Track				Church		Reservoir or Retention Dam	
Land Grant		Railroad Single Track				Radio Installation		Lake or Pond	
Miscellaneous (Reservation, etc.)		Glacier		Levee or Dike		Fire Lookout (Primary)		Intermittent Lake or Pond	
Park (State, County or Local)		Road Bridge		Corral		Fire Lookout (Secondary)		Dry Lake or Pond	
Township and Range	Surveyed / Protracted	Railroad Bridge		Recreation Site		Fire Tool Cache		Marsh	
Section	Surveyed / Protracted	Foot Bridge		Tanks (Labeled as to type)		Shelter		Spring	
Section, Status, Subdivision		Ferry		Oil or Gas Wells		Cliff Dwelling		Improved Spring	
Section Identification	6	Road Ford		Mine or Quarry		Ruins Small / Large	Ruins / Ruins	Well	
State plane Coordinates and Zone	1,500,000 E	Trail Ford		US Mineral Location or Monument		Cemetery	CEM	Artesian Well	
Boundary Monument		Road Tunnel		Located Object (Labeled)		Sawmill		Windmill	
Route Marker Interstate		Railroad Tunnel		Triangulation Station	Dog	Airfield		Aqueduct Tunnel	
Route Marker U.S.				Bluffs or Cliffs				Ditch or Canal	
Route Marker State		Prominent Peak		Prominent Ridge		Gaging Station		Aqueduct	

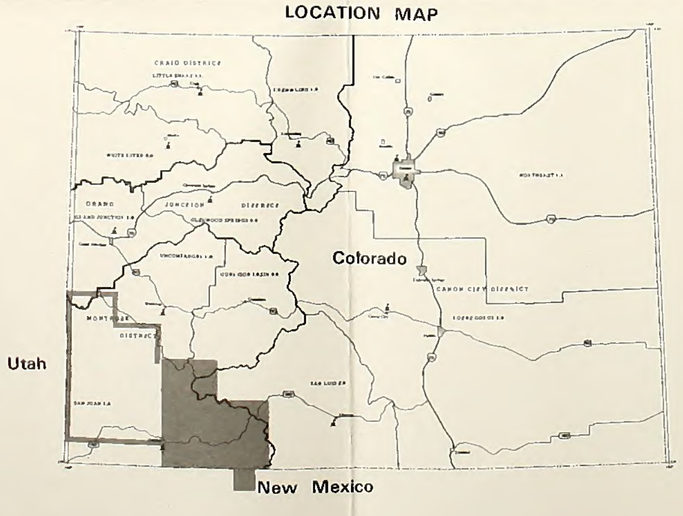
NOTE TO MAP USERS

These maps are designed and published as a planning and management tool. They are prepared from the best available information. Some of the lands aquired by Federal agencies may be still shown as patented (White) lands due to the lack of information available to BLM with respect to the nature of aquisition. Access through private lands may be restricted. Due to map scale some features such as roads are approximations and it is not possible to show ownership status of all small tracts below 10 acres. Ownership status and road conditions are dynamic features and change with the passage of time. The official land records in appropriate offices of the BLM and other Federal agencies should be checked for up-to-date status on any specific tract of land. Inadequacies in the BLM maps should be reported to the respective Bureau of Land Management offices from which the maps were obtained.

LAND STATUS LEGEND

- Public Lands (Administered by the Bureau of Land Management)
- National Forest Lands
- State Lands
- Colorado Division of Wildlife
- Reclamation and Water Power Projects Withdrawal
- Indian Lands and Reservations
- Private Lands
- Planning Area Boundary
- Federal Agency Protective Withdrawal
- Powersite Withdrawal
- Public Water reserve

LOCATION MAP



MULTIPLE USE EMPHASIS AREAS

EMPHASIS A – LIVESTOCK MANAGEMENT

EMPHASIS B – WILDLIFE

- Bai – Aquatic and riparian management
- Bdew – Deer and elk winter range
- Be – Eagles' winter concentration areas
- Belk – Elk calving grounds
- Bgi – Sage grouse strutting grounds
- Bp – Peregrine falcon habitat
- Bsl – Snake and lizard area

EMPHASIS C – RECREATION RESOURCES

EMPHASIS D – WILDERNESS STUDY AREAS

EMPHASIS E – MINERAL RESOURCES

- E – Department of Energy lease tracts or areas under mining plans of operation
- Ec – Future coal leasing areas
- Ef – Placerville fossil area
- Eog – Known Geologic Structures - oil & gas
- Es – Sand and gravel areas

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EMPHASIS G – GENERAL NATURAL RESOURCE MANAGEMENT

EMPHASIS H – PUBLIC LAND DISPOSAL

- He – Exchange lands only

EMPHASIS I – WILD HORSES

EMPHASIS J – FORESTRY

EMPHASIS K – WATER AND SOIL

- Ke – Erosion management areas
- Kes – Erosion and salinity management areas
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- Kw – Municipal watersheds or water quality improvement areas

945C-1

Produced by the:
Department of the Interior
Bureau of Land Management
Colorado State Office
Branch of Cartographic Services
1037 20th St.
Denver, Colorado 80202

LOCATION MAP

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

1984

San Juan - San Miguel

RESOURCE MANAGEMENT PLAN
MAP

Grazing Allotments

MONTROSE DISTRICT COLORADO

0 1 2 3 4 5 6
Scale in miles

WEST HALF

MAP SYMBOLS

Feature	Symbol	Feature	Symbol	Feature	Symbol	Feature	Symbol	Feature	Symbol
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Section	Surveyed / Protracted	Foot Bridge		Tanks (Labeled as to type)		Shelter		Spring	
Section, Status, Subdivision		Ferry		Oil or Gas Well		Cliff Dwelling		Improved Spring	
Section Identification	6	Road Ford		Mine or Quarry		Ruins Small / Large	Ruins / Ruins	Well	
State, plane Coordinates and Zone	1,500,000 E	Trail Ford		US Mineral Location or Monument		Cemetery	CEM	Artesian Well	
Boundary Monument		Road Tunnel		Located Object (Labeled)		Sawmill		Windmill	
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Route Marker U.S.				Bluffs or Cliffs				Ditch or Canal	
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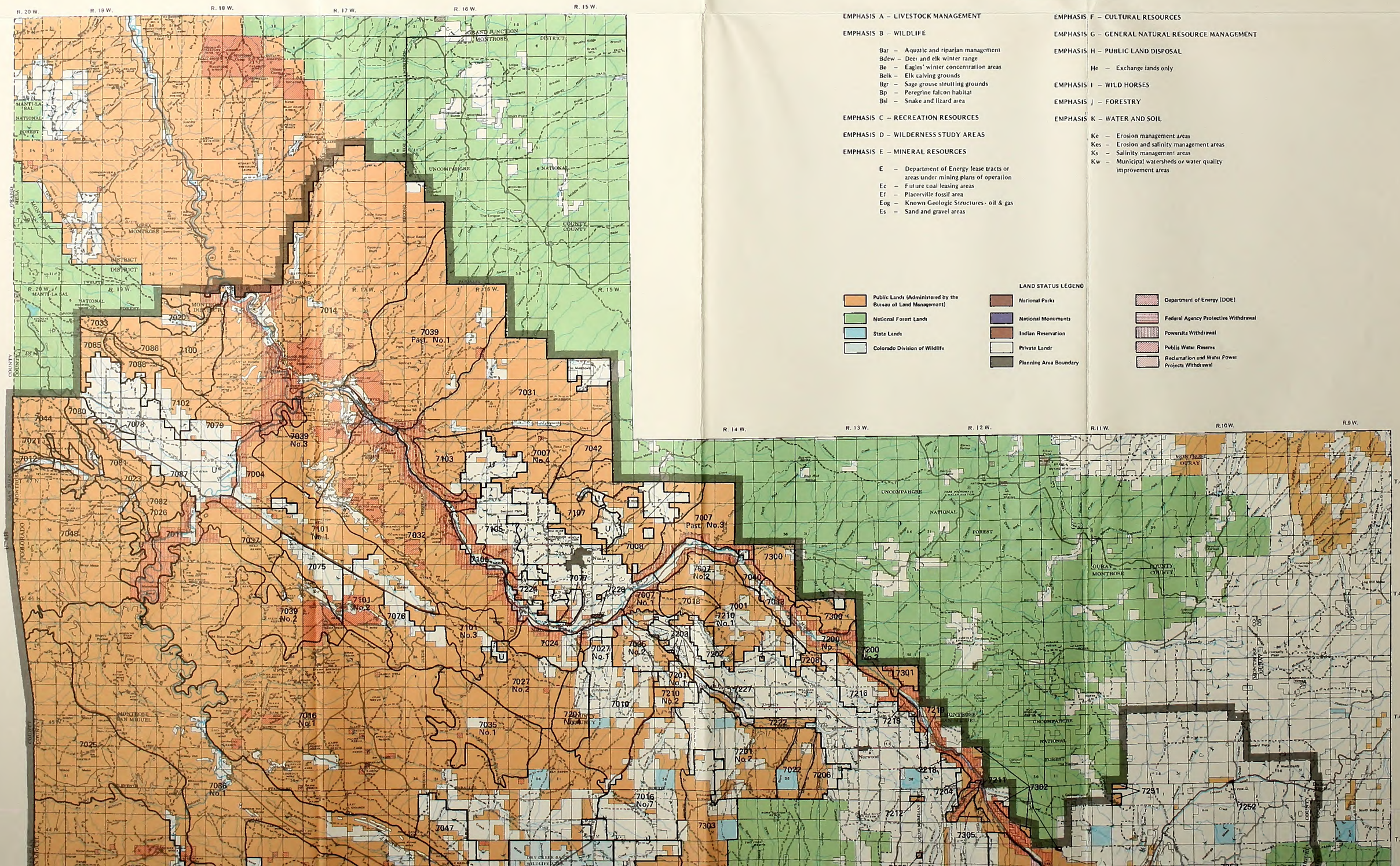

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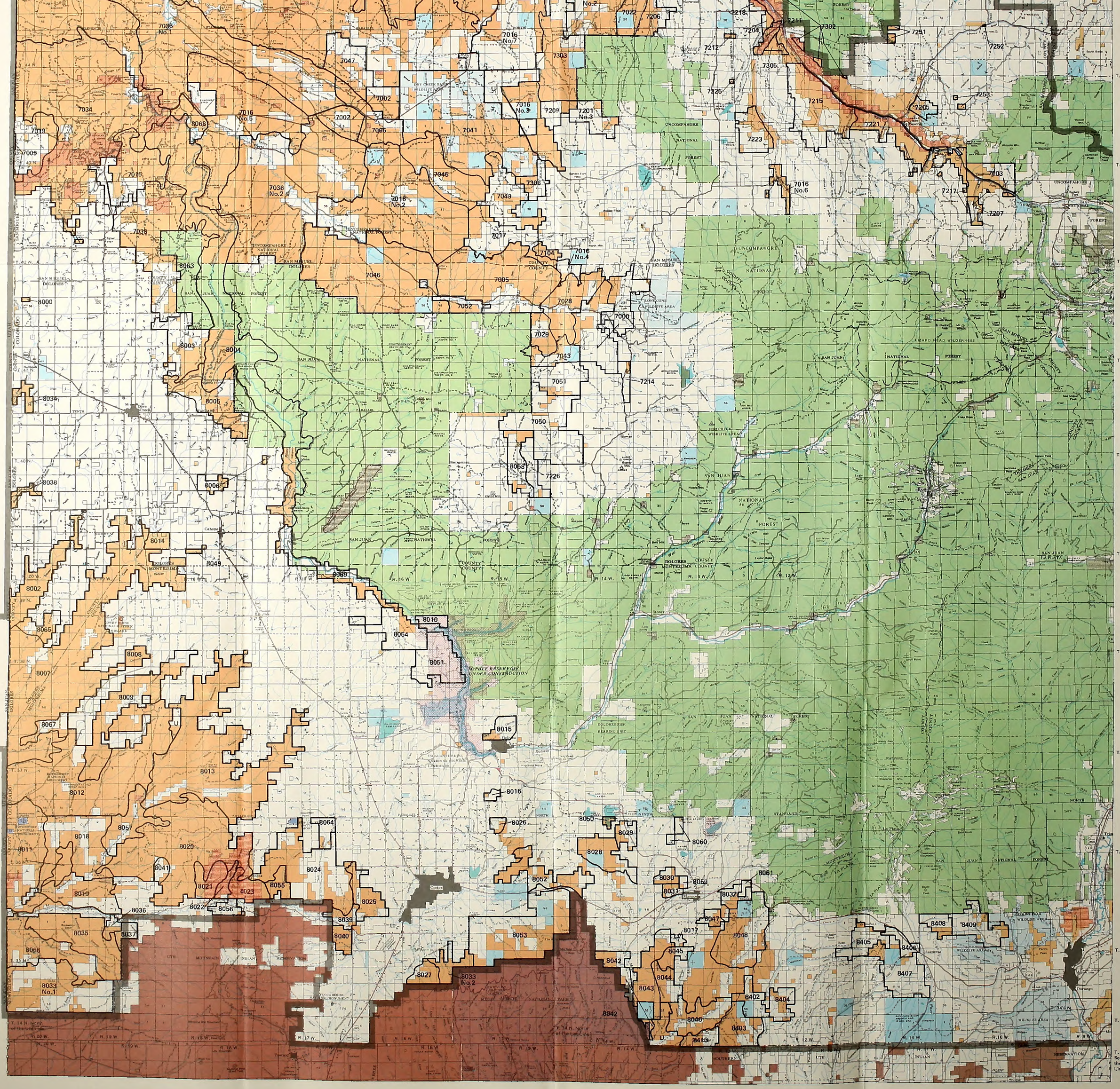

7036 No.1
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7016 No.5
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7201 No.3
7016 No.2
7016 No.4
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7036 No.2
7033 No.1
7033 No.2
UNCOMPAHGRE NATIONAL FOREST
SAN JUAN NATIONAL FOREST
DOLORES COUNTY
MONTEZUMA COUNTY
SAN MIGUEL COUNTY
LIZARD HEAD WILDERNESS
McPHEE RESERVOIR UNDER CONSTRUCTION
DOLORES FISH REARING UNIT
T. 44 N.
T. 43 N.
T. 42 N.
T. 41 N.
T. 40 N.
T. 39 N.
T. 38 N.
T. 37 N.
T. 36 N.
T. 35 N.
T. 34 N.
T. 34 N. South of the Ute Line

LOCATION MAP

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

1984

San Juan - San Miguel

RESOURCE MANAGEMENT PLAN
MAP

Preferred Alternative

MONTROSE DISTRICT COLORADO

N

0 1 2 3 4 5 6
Scale in miles

WEST HALF

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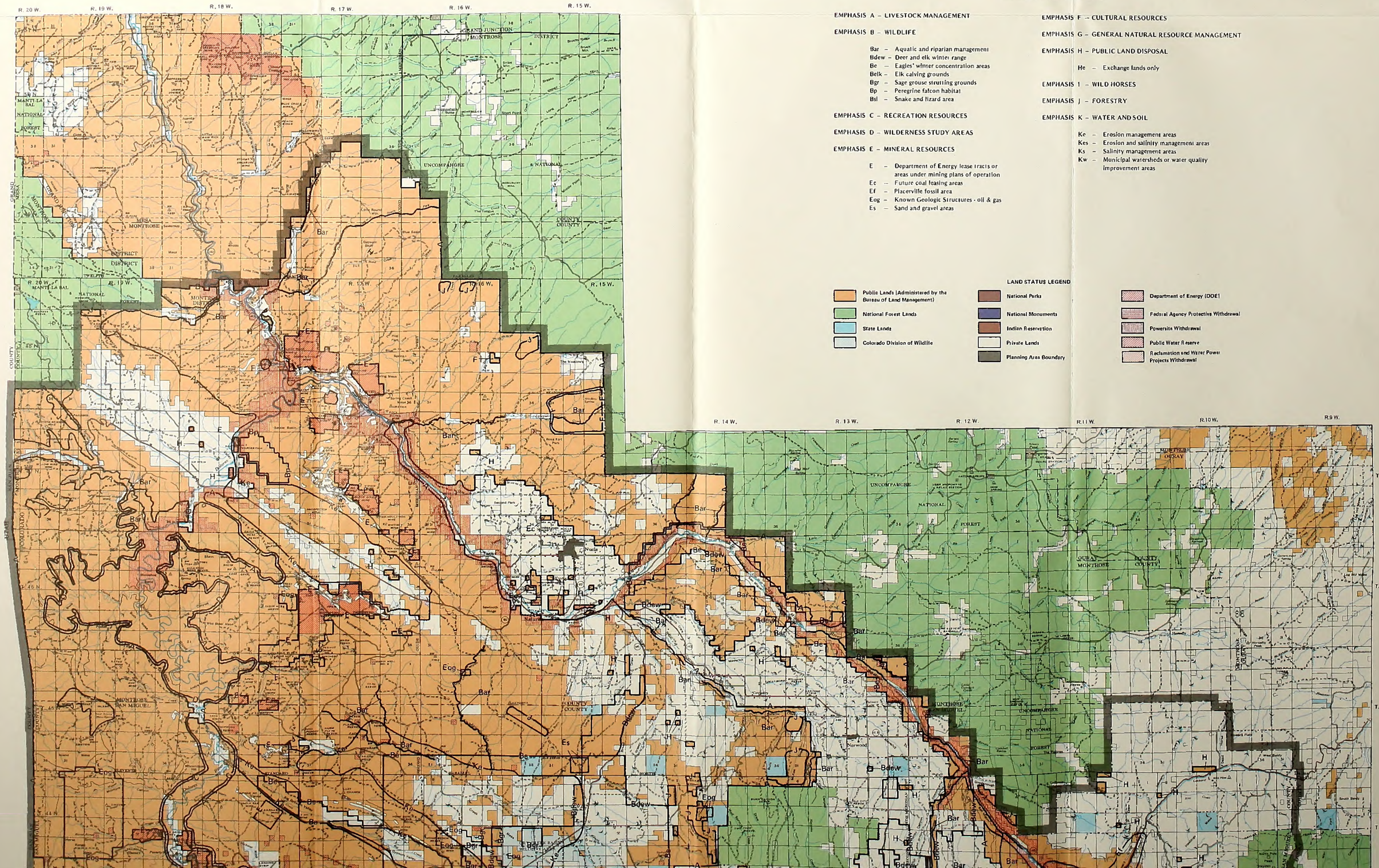

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DOLORES FISH REARING UNIT
UTE MOUNTAIN INDIAN RESERVATION
MESA VERDE NATIONAL PARK
Dolores
Cortez
Durango

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

1984

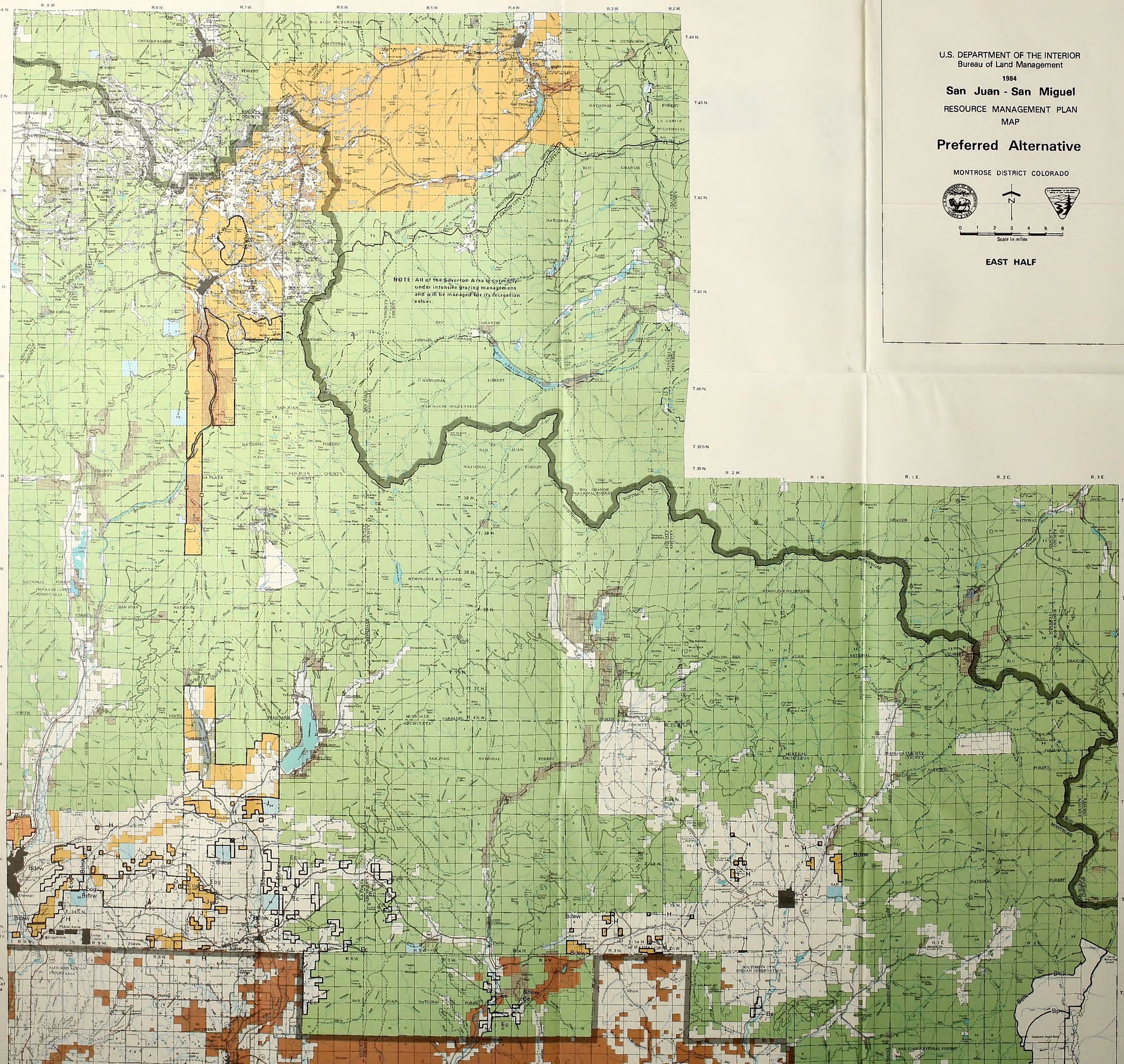
San Juan - San Miguel

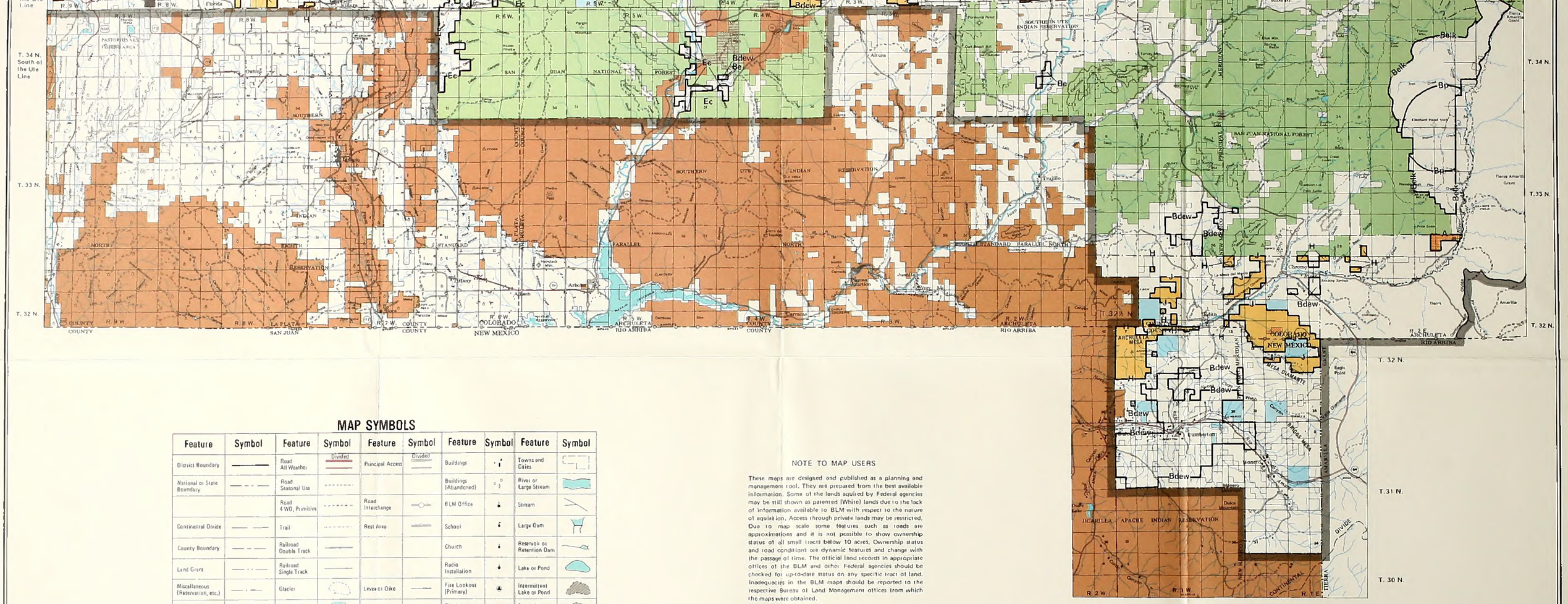
RESOURCE MANAGEMENT PLAN
MAP

Preferred Alternative

MONTROSE DISTRICT COLORADO

EAST HALF





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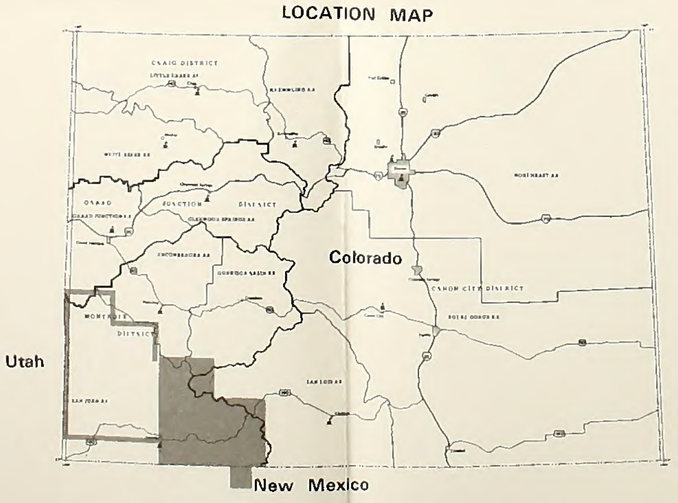

MULTIPLE USE EMPHASIS AREAS

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EMPHASIS B – WILDLIFE

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1037 20th St.
Denver, Colorado 80202

U.S. DEPARTMENT OF THE INTERIOR
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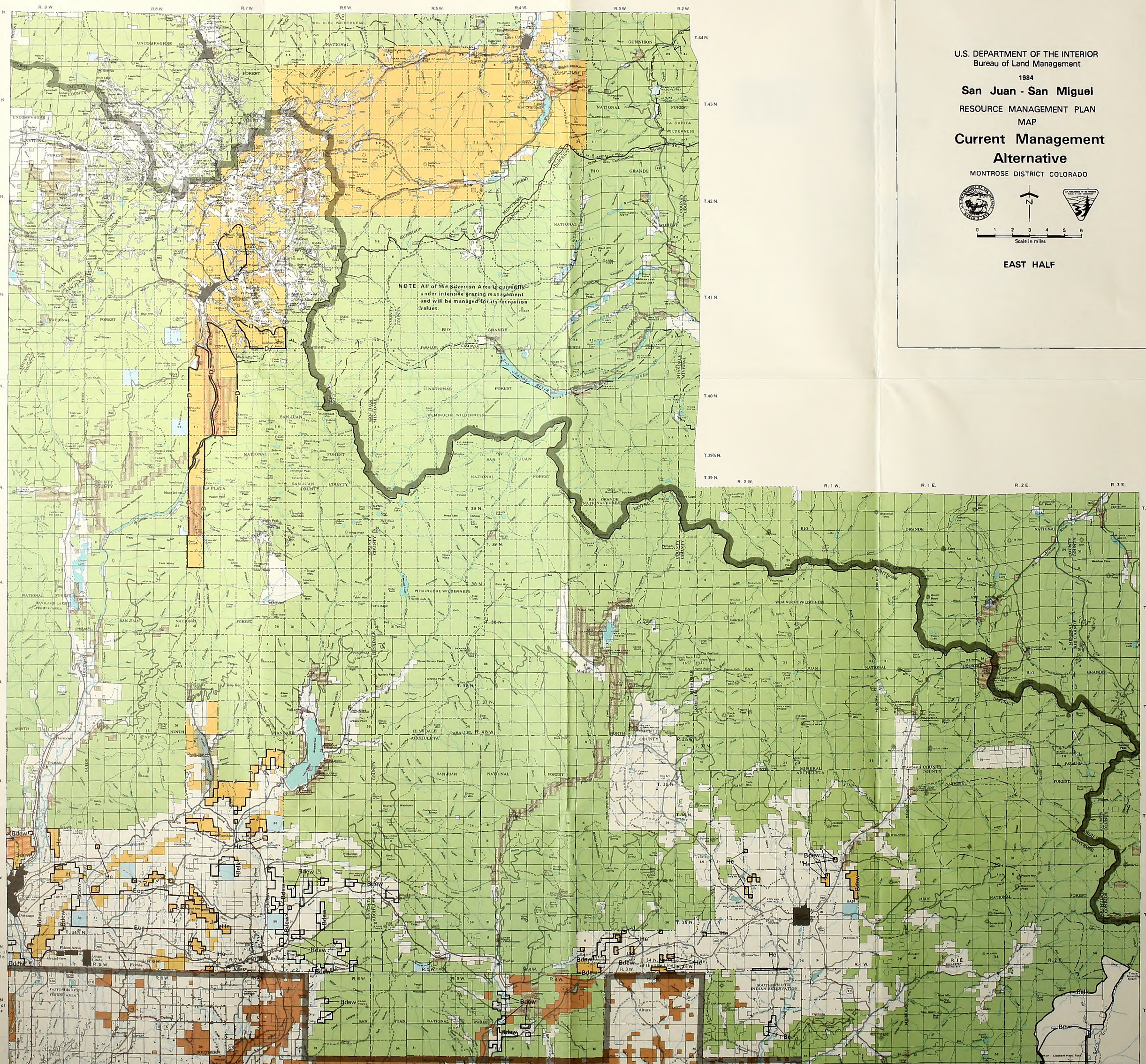
San Juan - San Miguel

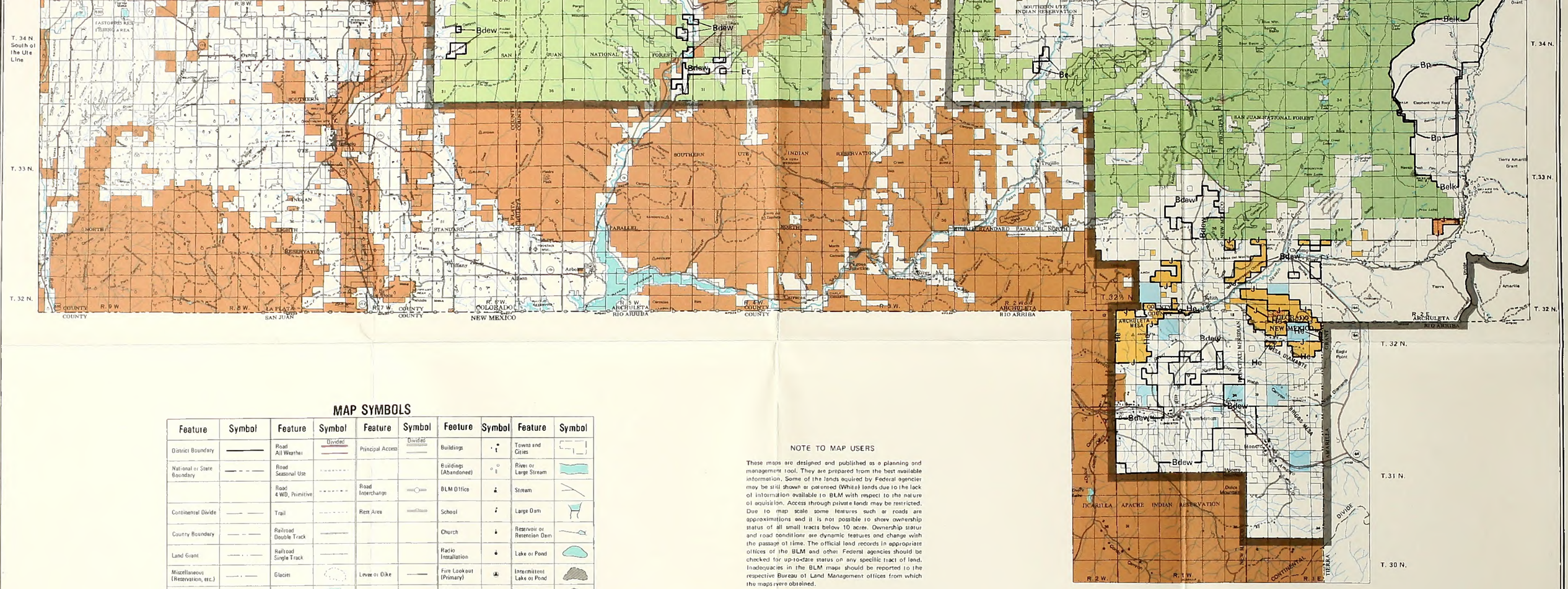
RESOURCE MANAGEMENT PLAN
MAP

Current Management Alternative

MONTROSE DISTRICT COLORADO

EAST HALF





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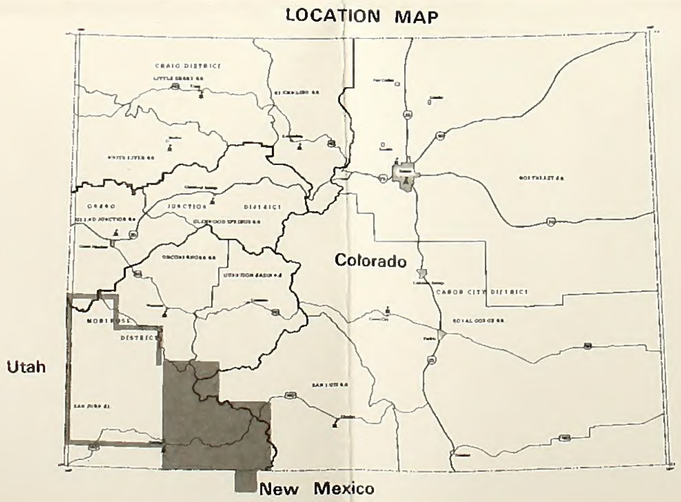

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LOCATION MAP

U.S. DEPARTMENT OF THE INTERIOR
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1984

San Juan - San Miguel

RESOURCE MANAGEMENT PLAN
MAP

Current Management Alternative

MONTROSE DISTRICT COLORADO

0 1 2 3 4 5 6
Scale in miles

WEST HALF

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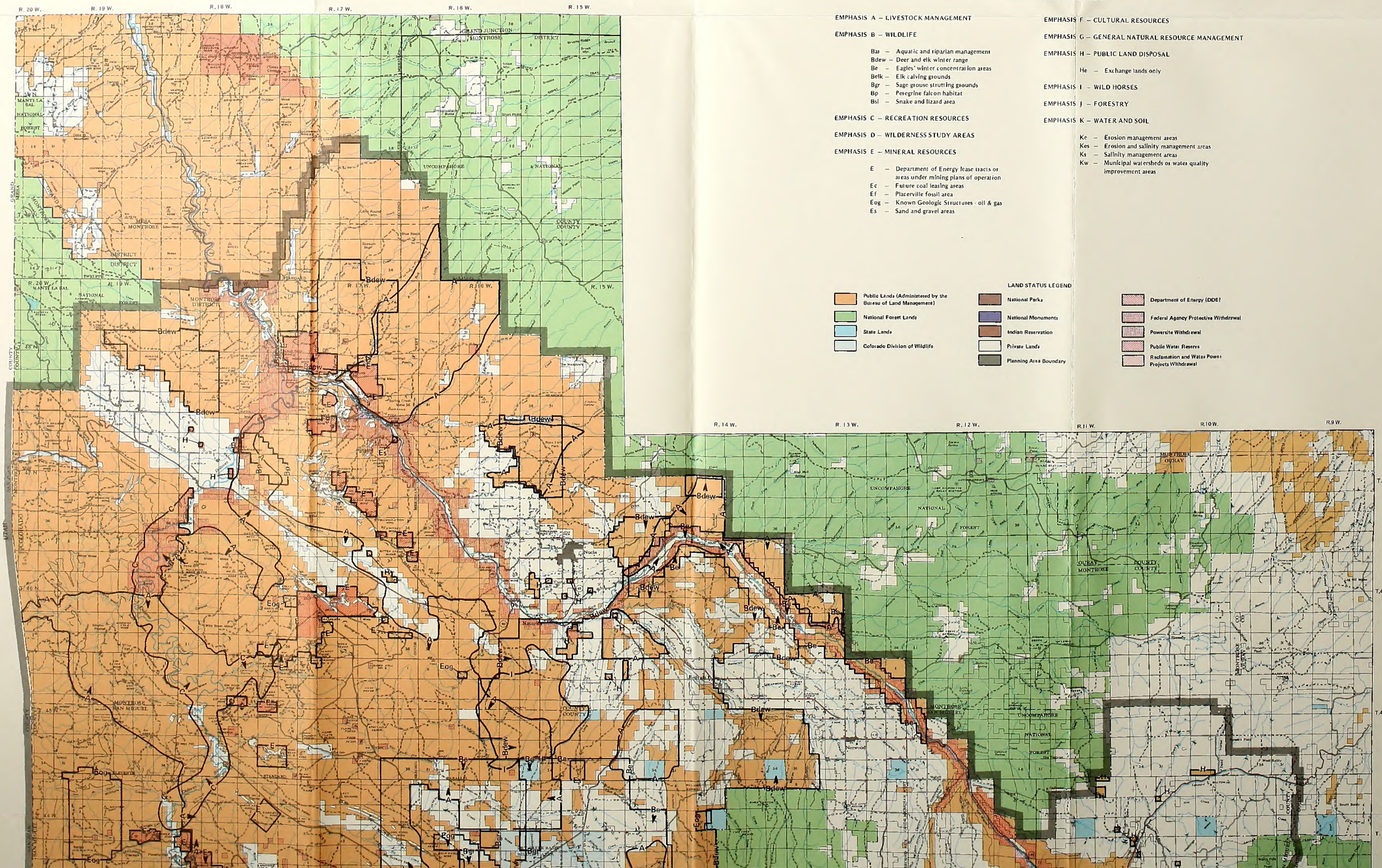

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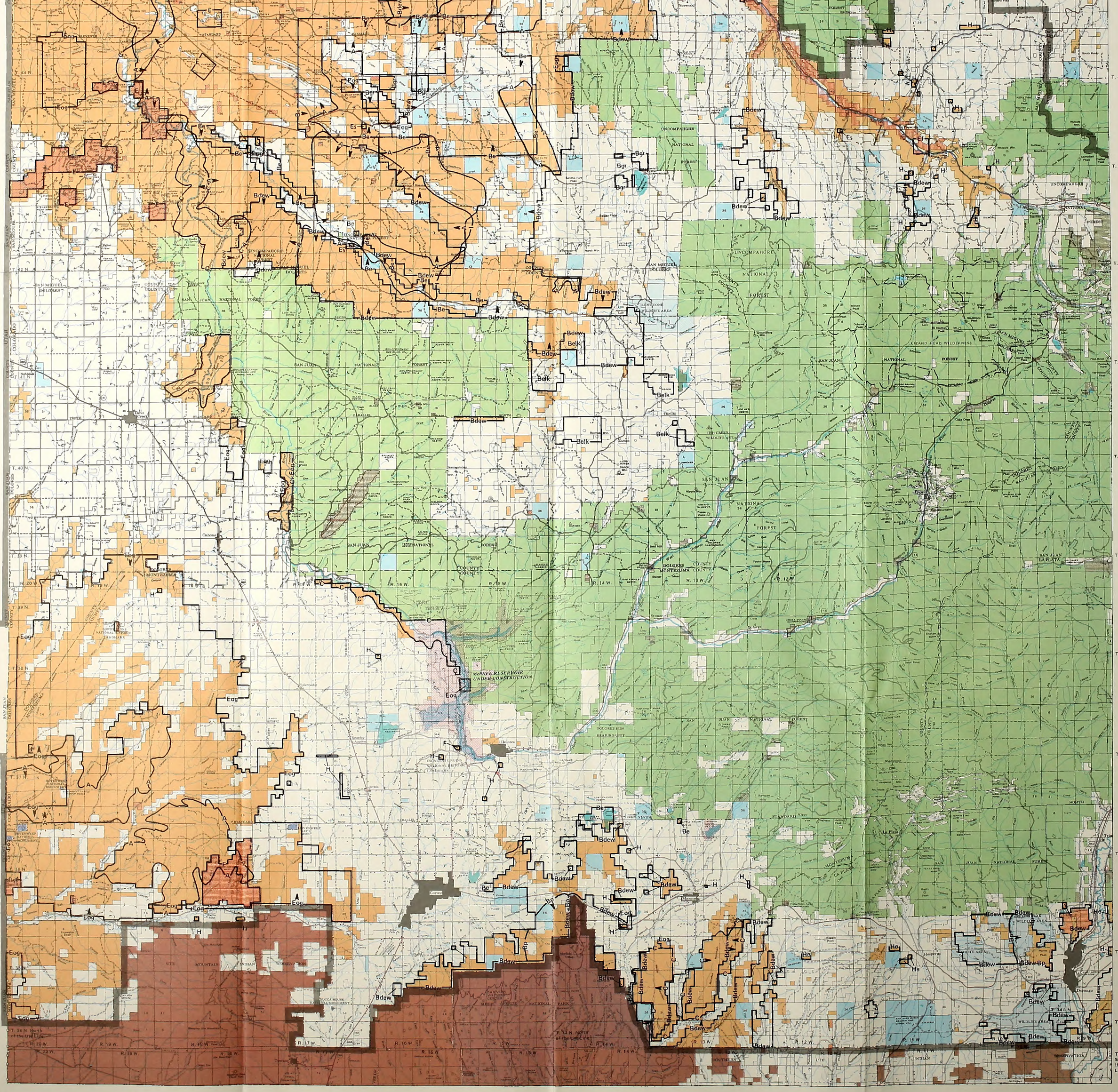

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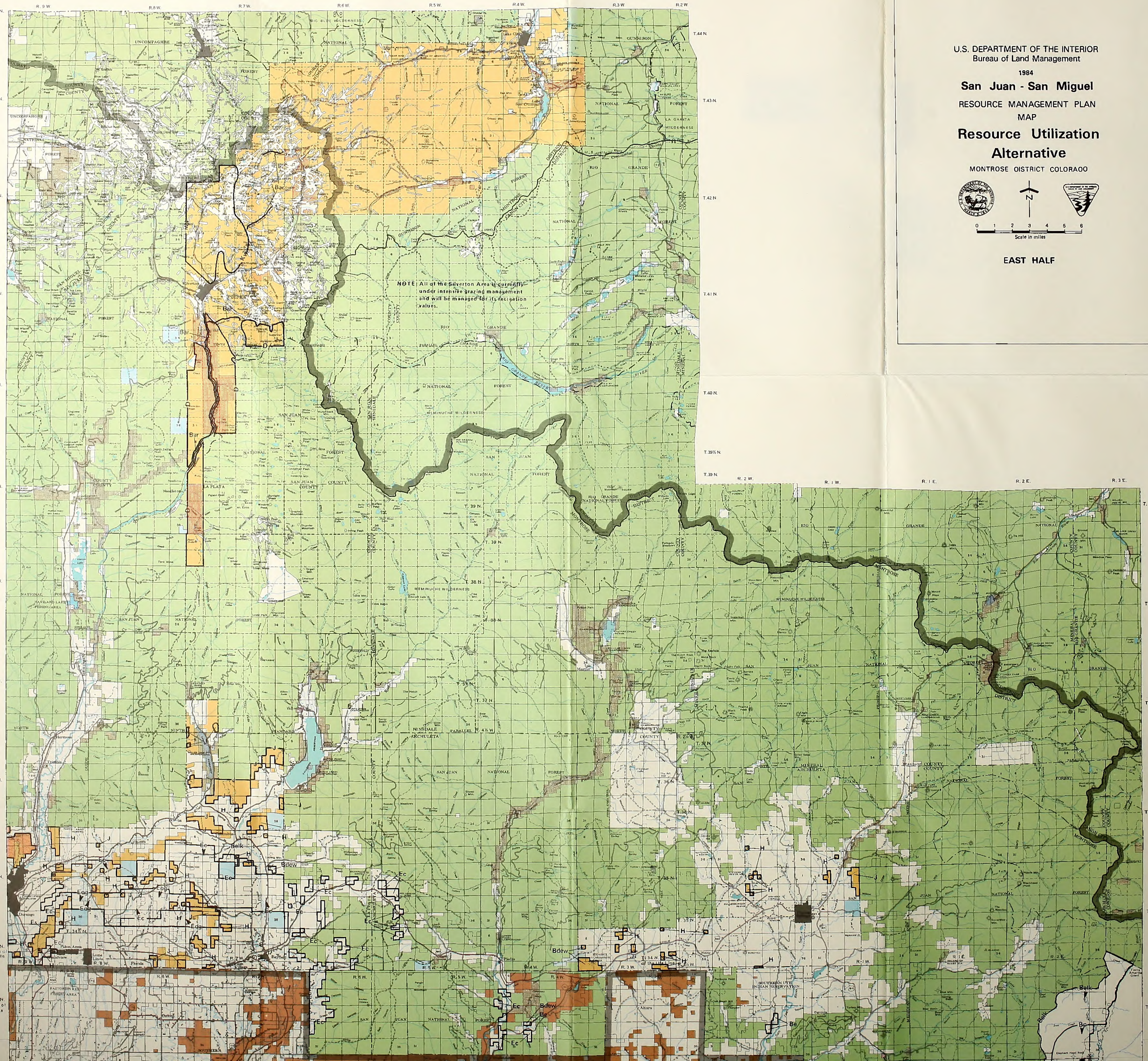
San Juan - San Miguel

RESOURCE MANAGEMENT PLAN

MAP

Resource Utilization Alternative

MONTROSE DISTRICT COLORADO



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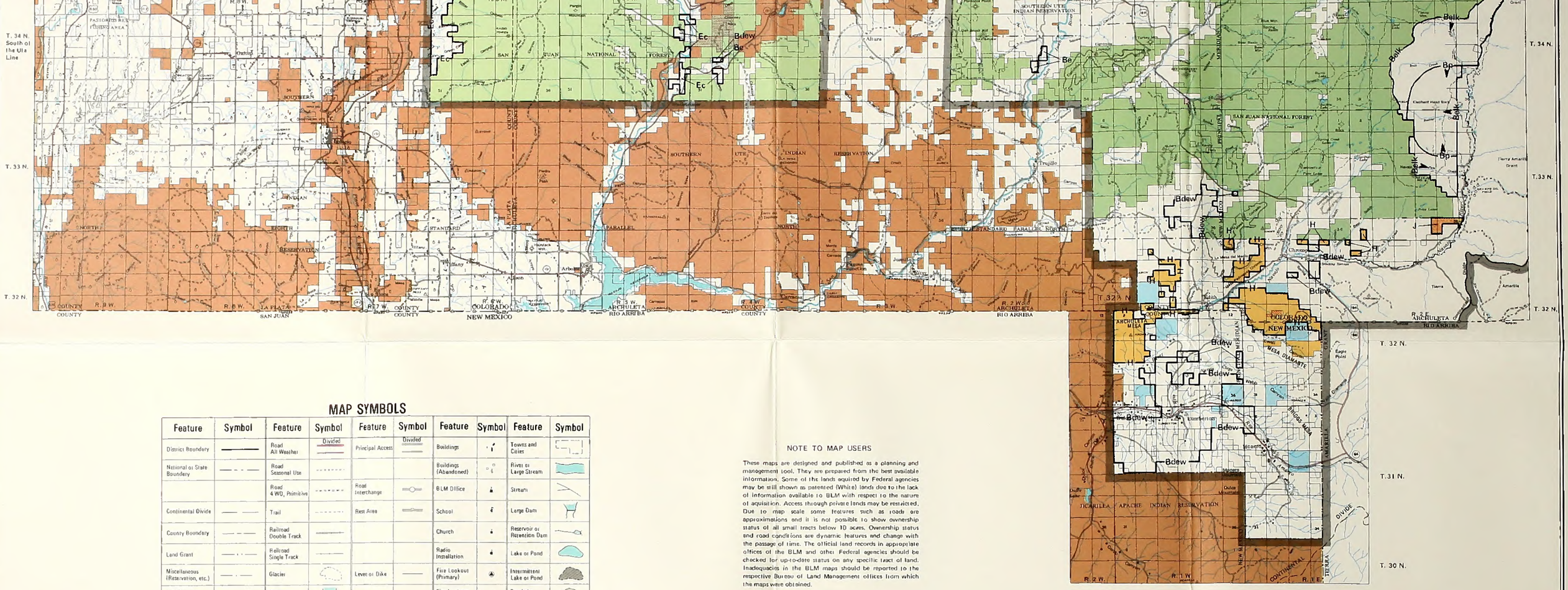

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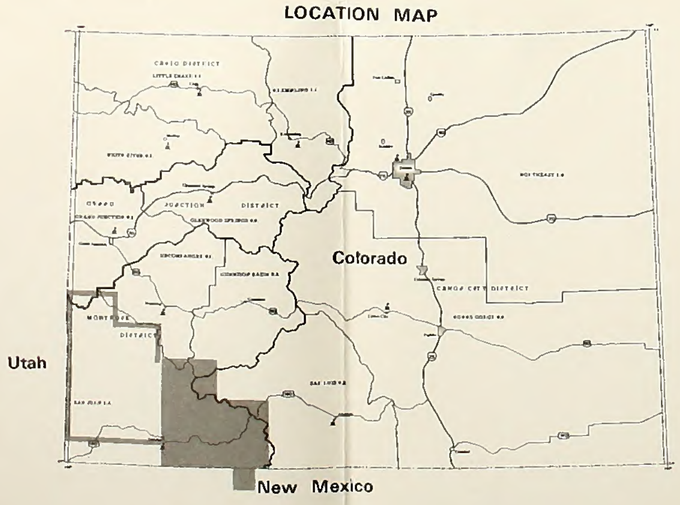

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0 1 2 3 4 5 6
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LAND STATUS LEGEND

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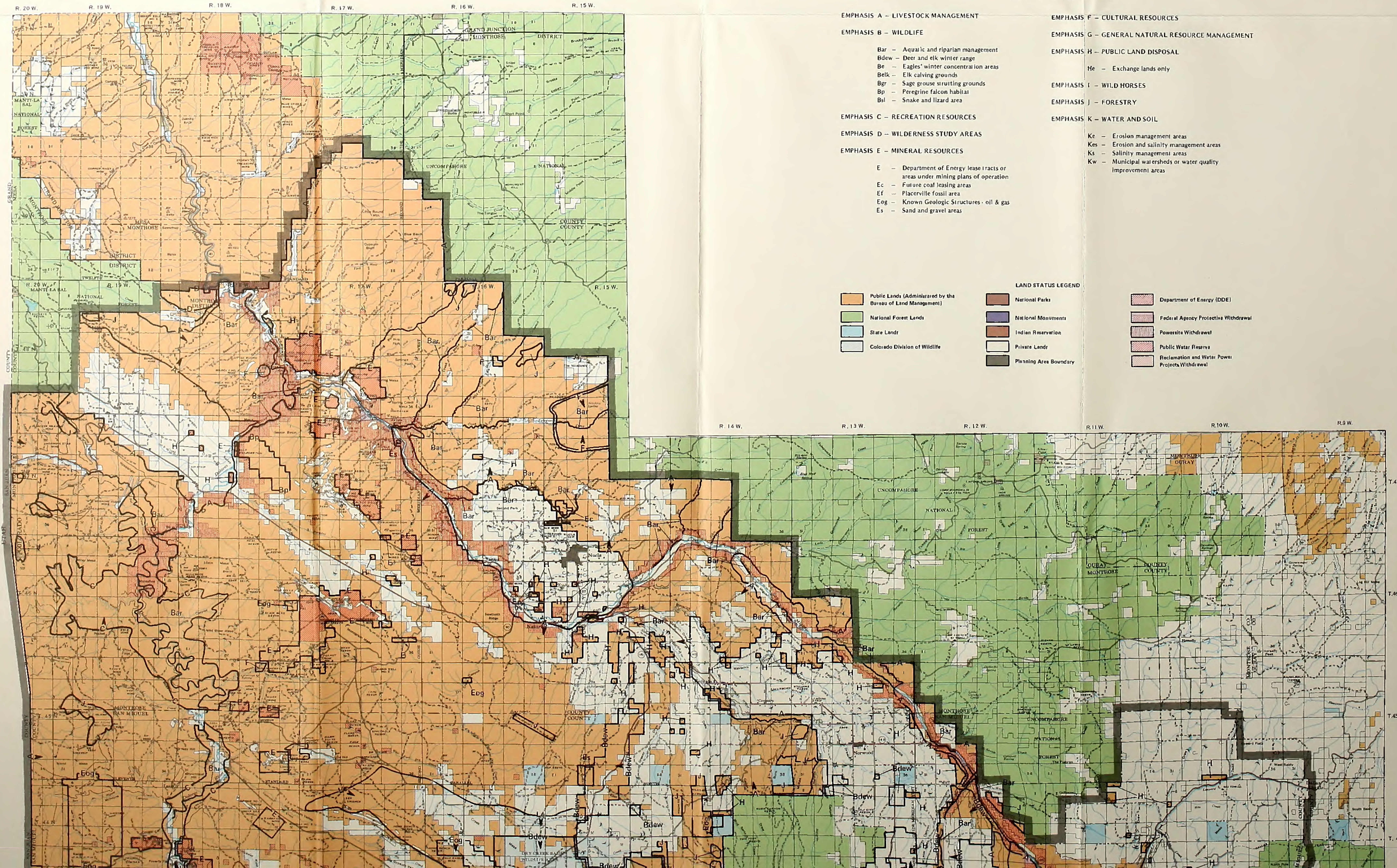
- Department of Energy (DOE)
- Federal Agency Protective Withdrawal
- Powersite Withdrawal
- Public Water Reserve
- Reclamation and Water Power Projects Withdrawal



T. 44 N.
T. 43 N.
T. 42 N.
T. 41 N.
T. 40 N.
T. 39 N.
T. 38 N.
T. 37 N.
T. 36 N.
T. 35 N.
T. 34 N.
T. 34 N. South of the Ute Line
UNCOMPAHGRE NATIONAL FOREST
SAN JUAN NATIONAL FOREST
LIZARD HEAD WILDERNESS
McPHEE RESERVOIR UNDER CONSTRUCTION
DOLORES FISH REARING UNIT
UTE MOUNTAIN INDIAN RESERVATION
SOUTHERN UTE INDIAN RESERVATION

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

1984

San Juan - San Miguel

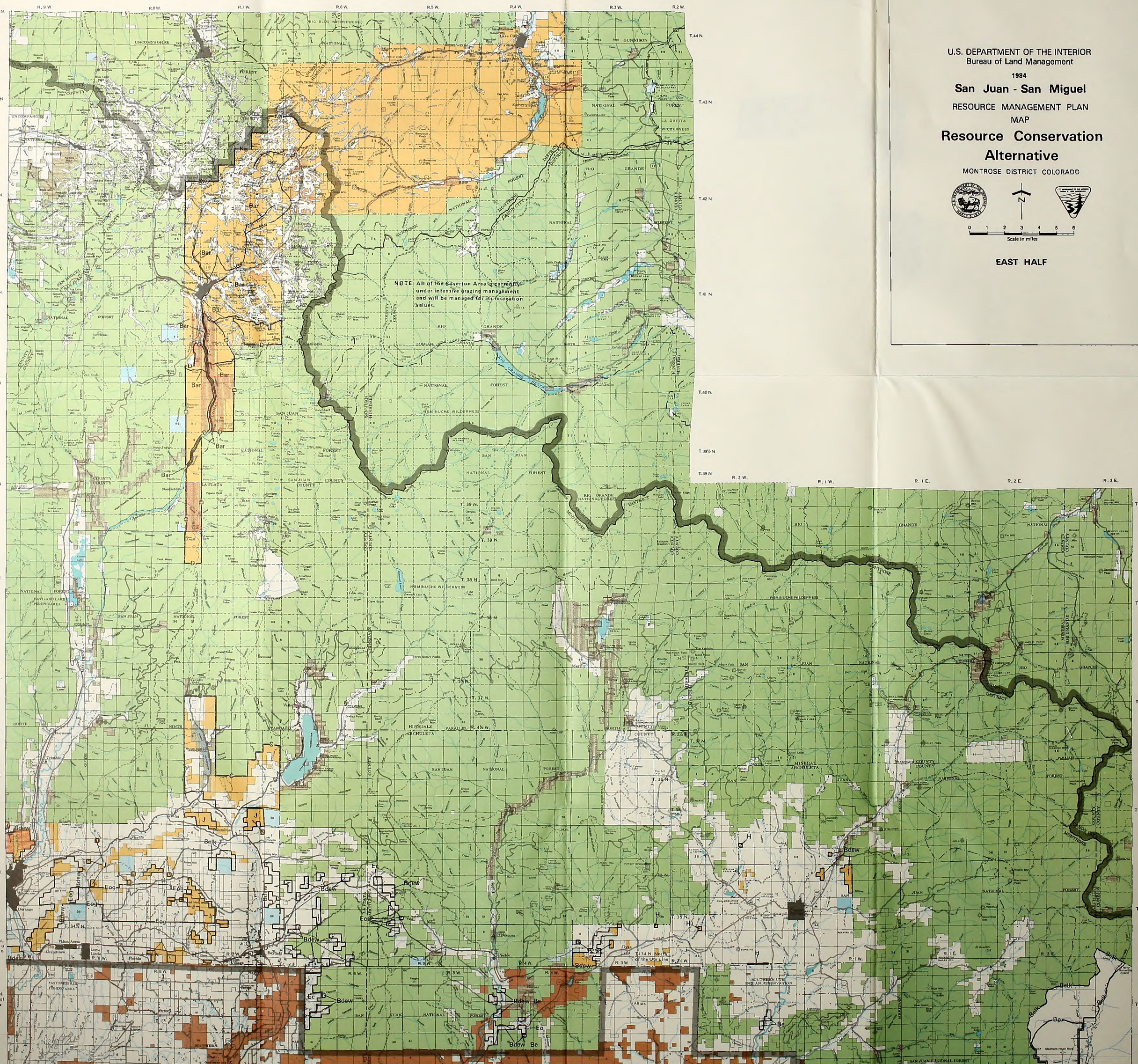
RESOURCE MANAGEMENT PLAN
MAP

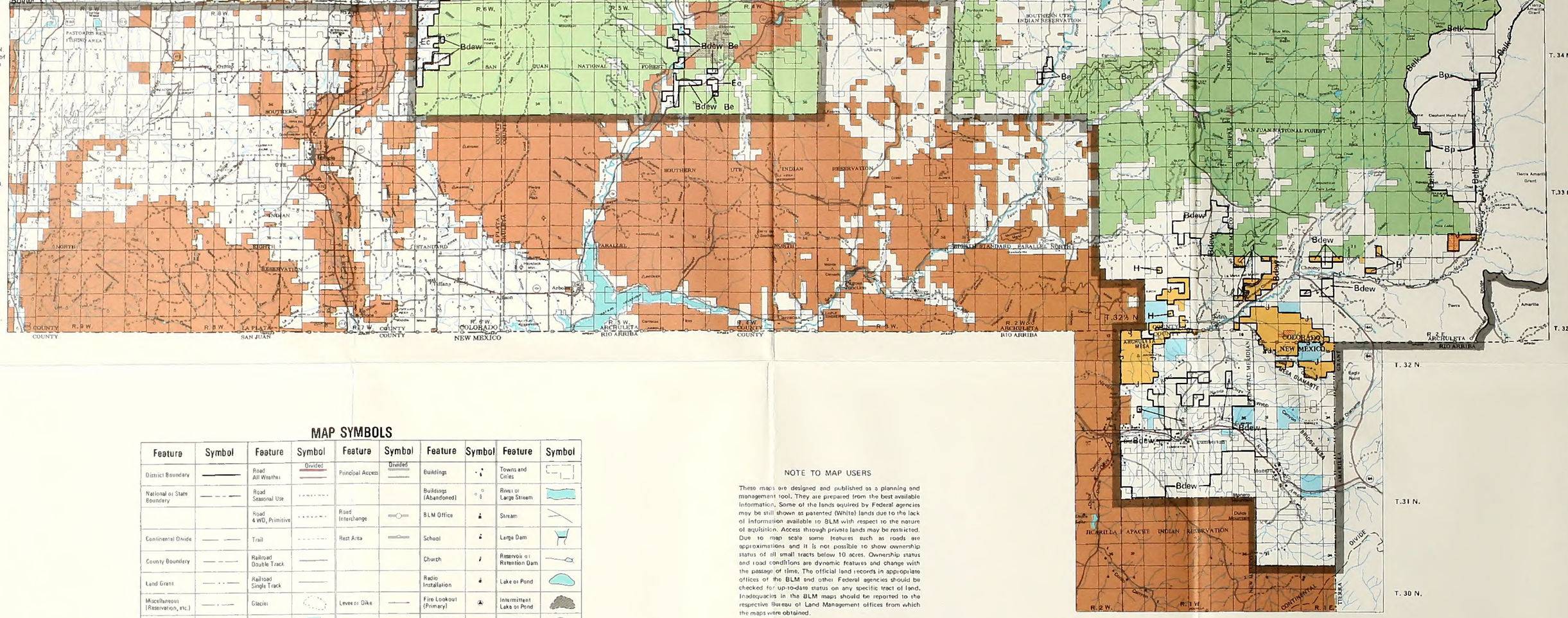
Resource Conservation Alternative

MONTROSE DISTRICT COLORADO

0 1 2 3 4 5 6
Scale in miles

EAST HALF





MAP SYMBOLS

Feature	Symbol	Feature	Symbol	Feature	Symbol	Feature	Symbol	Feature	Symbol
District Boundary		Road All Weather	Divided	Principal Access	Divided	Buildings		Towns and Cities	
National or State Boundary		Road Seasonal Use				Buildings (Abandoned)		River or Large Stream	
		Road 4 WD, Primitive		Road Interchange		BLM Office		Stream	
Continental Divide		Trail		Rest Area		School		Large Dam	
County Boundary		Railroad Double Track				Church		Reservoir or Retention Dam	
Land Grant		Railroad Single Track				Radio Installation		Lake or Pond	
Miscellaneous (Reservation, etc.)		Glacier		Levee or Dike		Fire Lookout (Primary)		Intermittent Lake or Pond	
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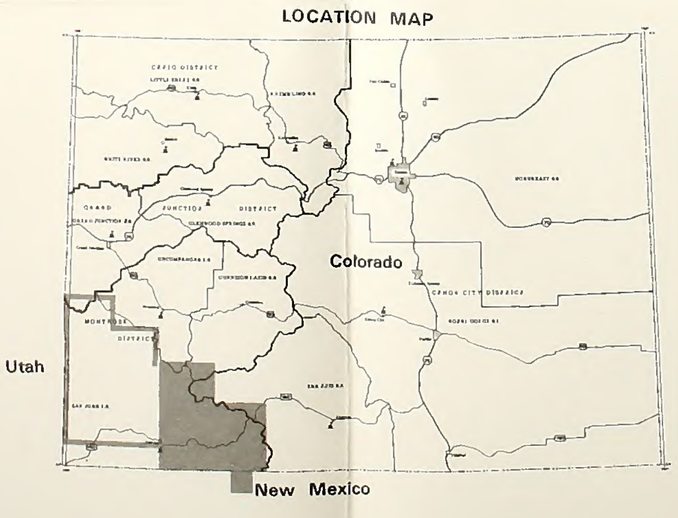
Section	Surveyed / Protracted	Foot Bridge		Tanks (Labeled as to type)		Shelter		Spring	
Section, Status, Subdivision		Ferry		Oil or Gas Wells		Cliff Dwelling		Improved Spring	
Section Identification	6	Road Ford		Mine or Quarry		Ruins Small / Large	Ruins / Ruins	Well	
State, plane Coordinates and Zone	1,500,000 E	Trail Ford		US Mineral Location or Monument		Cemetery	CEM	Artesian Well	
Boundary Monument		Road Tunnel		Located Object (Labeled)		Sawmill		Windmill	
Route Marker Interstate		Railroad Tunnel		Triangulation Station	Dog	Airfield		Aqueduct Tunnel	
Route Marker U.S.				Bluffs or Cliffs				Ditch or Canal	
Route Marker State		Prominent Peak		Prominent Ridge		Gaging Station		Aqueduct	

LOCATION MAP



NOTE TO MAP USERS

These maps are designed and published as a planning and management tool. They are prepared from the best available information. Some of the lands acquired by Federal agencies may be still shown as patented (White) lands due to the lack of information available to BLM with respect to the nature of aquisition. Access through private lands may be restricted. Due to map scale some features such as roads are approximations and it is not possible to show ownership status of all small tracts below 10 acres. Ownership status and road conditions are dynamic features and change with the passage of time. The official land records in appropriate offices of the BLM and other Federal agencies should be checked for up-to-date status on any specific tract of land. Inadequacies in the BLM maps should be reported to the respective Bureau of Land Management offices from which the maps were obtained.

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- Public Water reserve

MULTIPLE USE EMPHASIS AREAS

EMPHASIS A – LIVESTOCK MANAGEMENT

EMPHASIS B – WILDLIFE

- Bar – Aquatic and riparian management
- Bdew – Deer and elk winter range
- Be – Eagles' winter concentration areas
- Belk – Elk calving grounds
- Bgr – Sage grouse strutting grounds
- Bp – Peregrine falcon habitat
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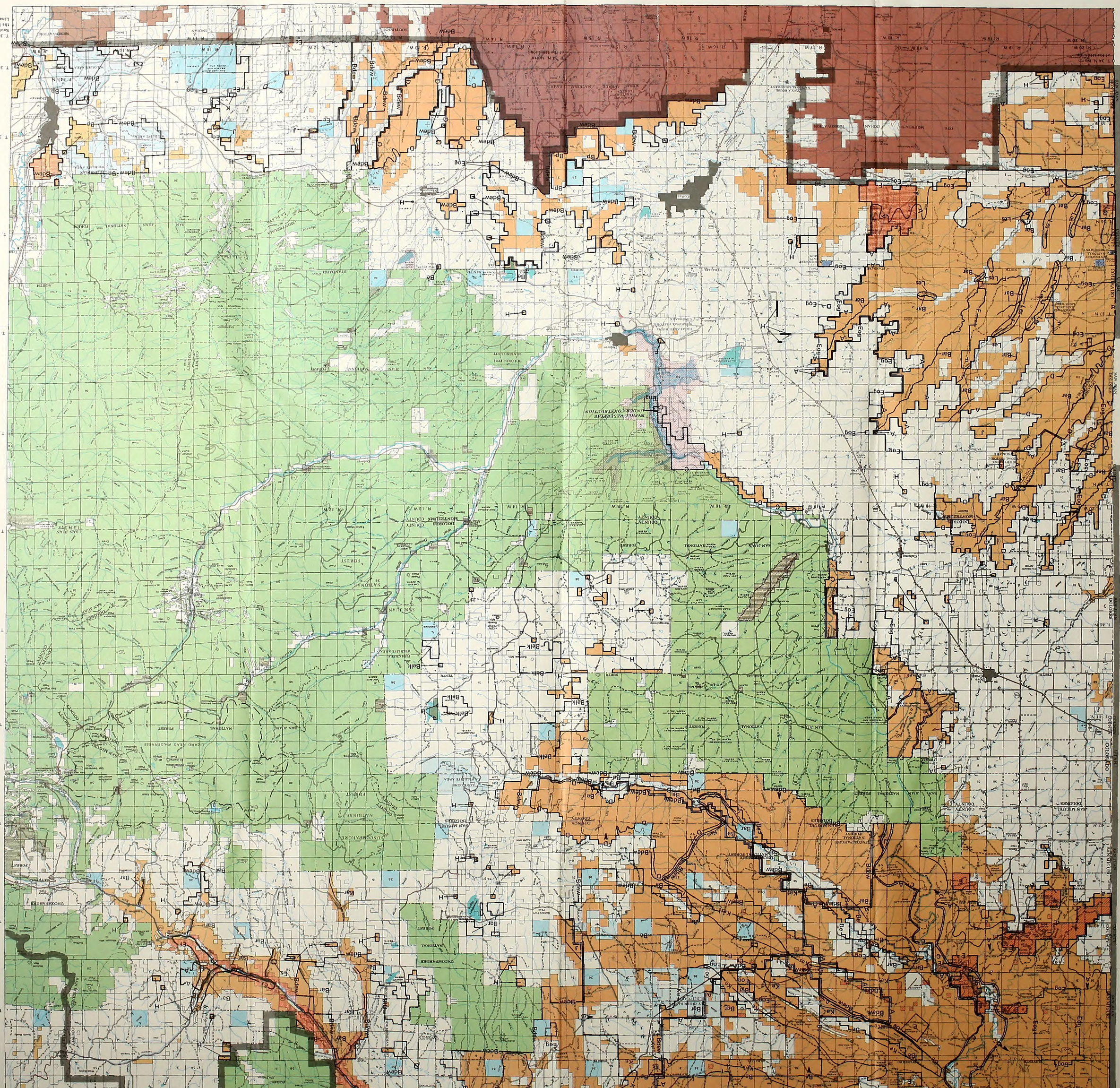
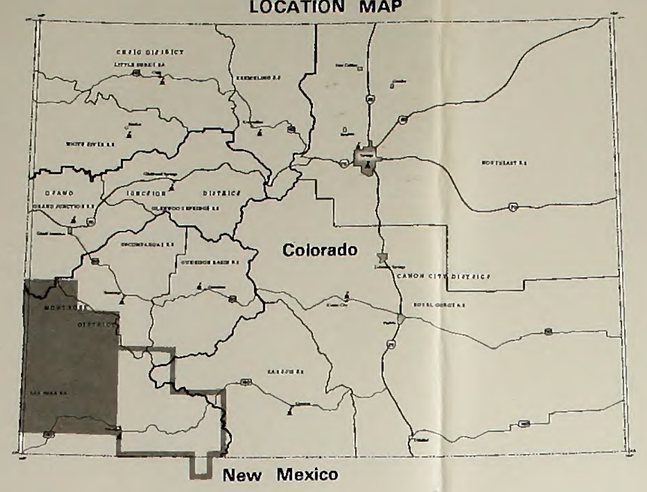
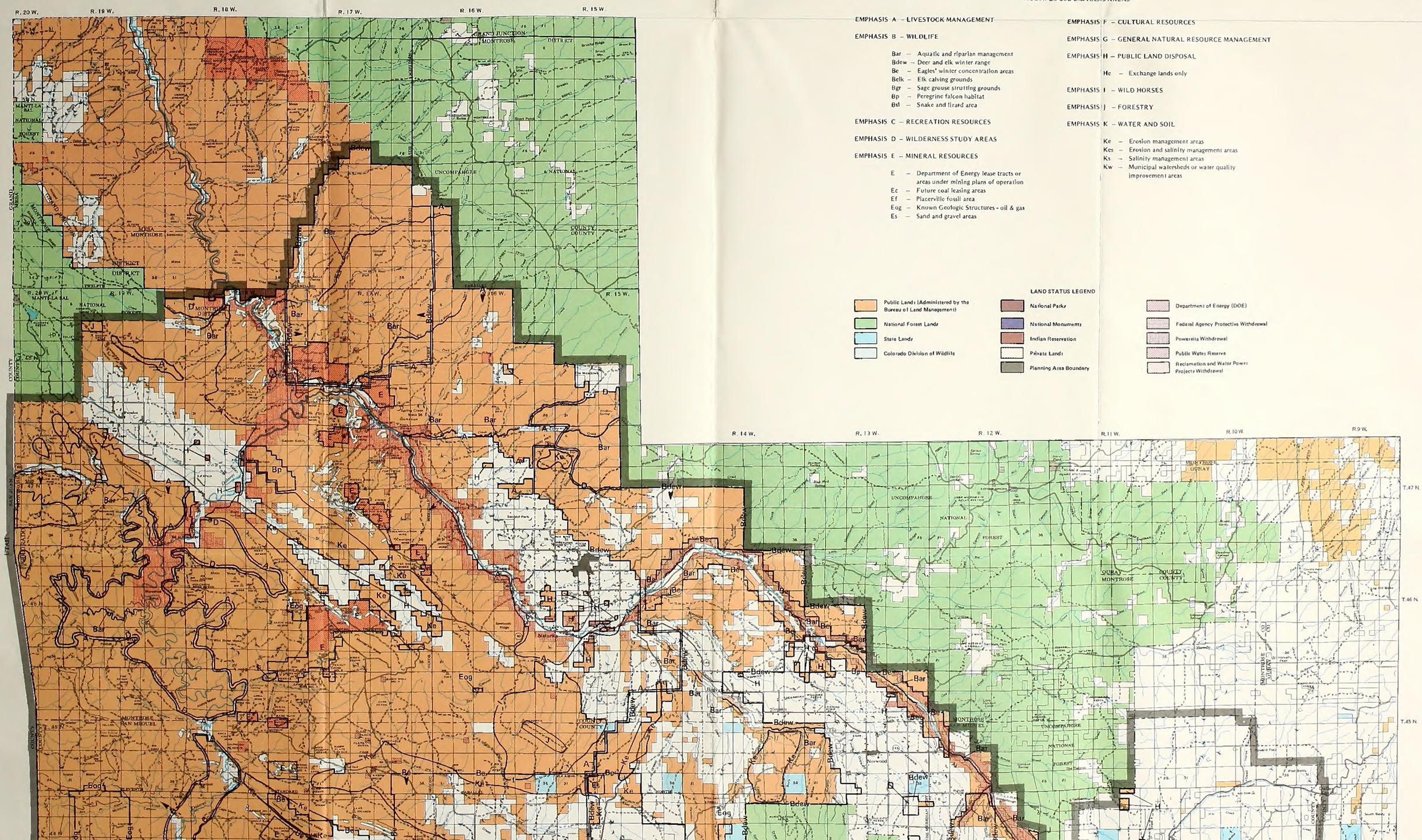
9450-1

Produced by the:
Department of the Interior
Bureau of Land Management
Colorado State Office
Branch of Cartographic Services
1037 20th St.
Denver, Colorado 80202







U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

1984

San Juan - San Miguel

RESOURCE MANAGEMENT PLAN
MAP

Resource Conservation Alternative

MONTROSE DISTRICT COLORADO

0 1 2 3 4 5 6
Scale in miles

WEST HALF

LOCATION MAP

Colorado
New Mexico
CRAIG DISTRICT
LITTLE SNAKE RA
KREMMLING RA
WHITE RIVER RA
GRAND JUNCTION DISTRICT
GRAND JUNCTION RA
GLENWOOD SPRINGS RA
UNCOMPAHGRE RA
GUNNISON BASIN RA
MONTROSE DISTRICT
SAN JUAN RA
SAN LUIS RA
NORTHEAST RA
CANON CITY DISTRICT
ROYAL GORGE RA

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R. 20 W.
R. 19 W.
R. 18 W.
R. 17 W.
R. 16 W.
R. 15 W.
R. 14 W.
R. 13 W.
R. 12 W.
R. 11 W.
R. 10 W.
R. 9 W.
T. 47 N.
T. 46 N.
T. 45 N.
T. 44 N.
GRAND JUNCTION
MONTROSE
DISTRICT
UNCOMPAHGRE
NATIONAL
FOREST
MANTI-LA SAL
NATIONAL FOREST
GRAND MESA
COUNTY
MONTROSE
SAN MIGUEL
OURAY
UTAH
COLORADO
SAN JUAN
Bar
Bdew
Be
Bp
A
D
E
H
Ke
Kes
Eog

Form 1279-3
(June 1984)

R

BORROWER

SF 85.35 .C6 S26 198
Draft resource manag
plan and environmen

DATE LOANED	BORROWER
10-27-87	Charles Botdorf Yuma D.O. due: ~~11-10-~~

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